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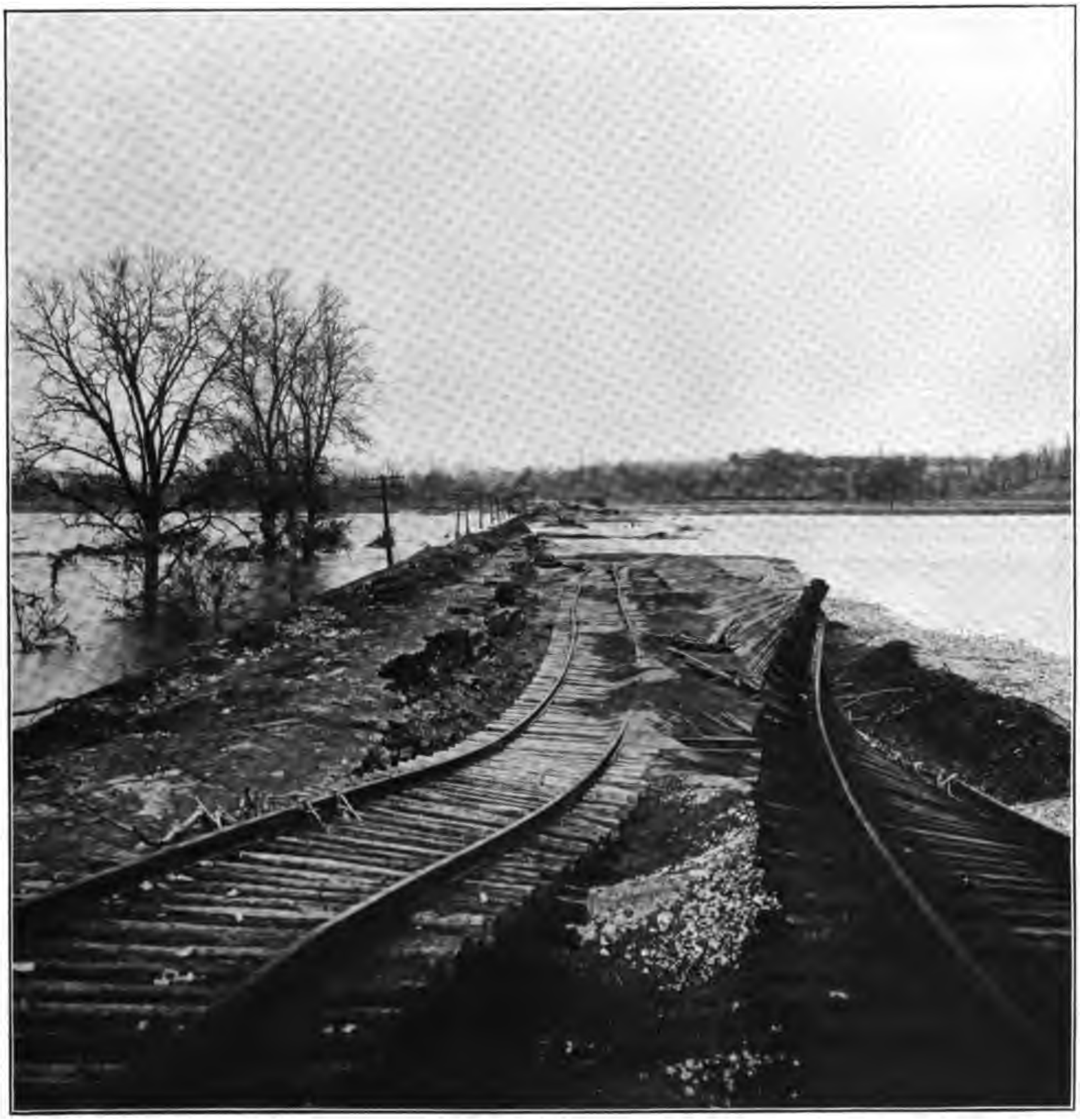
Coffin

R Hammerstein



A RAILROAD TO BE REBUILT.

Coshocton, Ohio, west of. March 30, 1913.

Looking toward Pittsburgh from the east approach to Bridge No. 100, over the Muskingum River. The normal channel of the river lies a quarter of a mile or more to the left of the railway, which was carried on a high embankment, 2,700 lineal feet of which was washed away, from 10 to 25 feet deep; two of the four spans of the bridge were swept away and a third damaged.

PENNSYLVANIA LINES
WEST OF PITTSBURGH

A HISTORY
OF THE
FLOOD
OF
MARCH, 1913

COMPILED
BY
C. W. GARRETT

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To the Management of the
Pennsylvania Lines West of Pittsburgh:

By your direction, there has been prepared and is submitted herewith a record of the Flood of March, 1913, and its disruption of the service of your Lines, in such detail as to give a general idea of the extent of the damage and the progress of the work of restoration.

But not in this account of the more prosaic facts, nor in any of the records of the Company, will be found the real story of the flood, unless it be read between the lines by those who were "in the thick of the fight."

By the destruction of most of the means of communication, at the same time that the tracks and bridges were washed away, the system was broken into many fragments; each Division was left pretty much to its own resources, without knowledge as to what had occurred elsewhere and without opportunity to confer as to the best means of restoring service, or to secure information as to material, supplies or men available for repair work. Many Divisions were separated into two or more sections, neither of which had any means of communication with the others.

Just as it was the first thought of the general officers in Pittsburgh that the hundreds and thousands of people whose lives were endangered should be rescued, and that what was left of the railroad should be offered for that service, so was it the first thought of employees everywhere to rescue from the flood those who were in danger. Some manned bridges to take people from floating wreckage or buildings, some manned life boats, some took ropes and poles to the streams; many risked their own lives in saving others or in attempting to save the Company's property from damage. The safety and comfort of passengers enroute was looked after everywhere, sometimes at considerable sacrifice and real risk to the employees in charge of the marooned trains.

When there was no longer need of emergency rescue work, attention was turned to putting the railroad in shape to run trains, particularly trains carrying relief supplies, and the local officers and employees all over the system arranged for service of some sort over such detached portions of the road as were not damaged, or could be put in shape in short time. This necessarily was done without advice or instructions in most cases, and in one instance trains were running over a portion of a Division for twenty-four hours or more before the Superintendent, although only a few miles away, could be informed of what was being done.

To recount the many acts of heroism, the great number of unusual risks taken, the universal devotion to duty, even though that duty involved great personal discomfort, days and nights of work in rain and snow and water, would fill a large volume. It would be unfair to tell a part of the story unless it were all told, and as much of it will never be known except to the men in the field, it is impossible to make a record of it. Neither would it be fair to mention by name any officer or employee of the Company unless all who had a place in the work of restoration were named.

It must be enough to record that, without exception, the officers and employees of the Pennsylvania Lines went to work, each in his own place, to restore railway service through the flooded districts; braving every hardship, making every necessary sacrifice, bringing to the work all the resourcefulness and enthusiasm at their command. Many found it the most thrilling and eventful experience of a lifetime. Throughout the whole undertaking, there was the one dominant spirit of co-operation,—voluntary, unconscious co-operation usually, but even for that the more effective. Men from widely separated portions of the Pennsylvania System, many of whom had never even heard of each other before, worked together, or in relays on the same job, just as though they had been always accustomed to each other's ideas and methods.

To put the history in the most convenient shape for reference, the general situation, as it was known from day to day to the general officers in Pittsburgh, is first outlined. Rather than list in detail the points at which damage was done, and the portions of the road over which it was possible to perform some sort of public service, maps have been prepared to show in green that portion of the Lines where the high water covered the tracks, etc., so that it was impossible to ascertain the actual conditions; in red that portion of the Lines which was actually damaged beyond use; and in yellow that portion of the Lines over which passenger train service, regular or "makeup," was performed for the benefit of the public. Remaining on each map will be found sections of the Lines uncolored, representing isolated pieces of road which it was impossible to reach on account of damage at either end, or which were used only by work trains engaged in making repairs.

Following this daily story of the general situation, will be found a brief history of the actual damage sustained on each Division and the method of restoring service, etc. In this account, each Division is treated separately, so that it will not be necessary to go through a great deal of material to follow the work at any given point. Photographs representative of the actual conditions existing on various parts of the Lines have been used, telling the story of the destruction wrought more clearly and concisely than could be done in any other way.

It is not yet possible to give an account of the permanent rebuilding of the destroyed and damaged bridges, structures, etc., nor the cost of such permanent reconstruction, for some of it cannot be completed for months. This record has therefore been closed with the resumption of service over the temporary roadbed and structures provided to meet the emergency. So much material is available that it has been difficult to decide what to include and what to omit. Too long an account would be wearisome; too brief an account would have little reference value.

General tables of rainfall, height of streams, etc., follow the descriptive text as appendices.

CHAPTER 1.

METEOROLOGICAL AND TOPOGRAPHIC CONDITIONS.

The flood of March, 1913, was brought about by an unusual succession of weather conditions which may possibly never be repeated, but which may recur at any time,* particularly in the spring season.

Preceding the heavy rains of March 23rd to 27th there was a storm of moderate intensity on March 20th and 21st, accompanied by winds as high as 60 to 70 miles an hour, which badly crippled telegraph service through the whole territory served by the Pennsylvania Lines West of Pittsburgh. There was a precipitation of one-half to one inch of rain through the valley of the Ohio and its tributaries, which pretty thoroughly saturated the ground, so that when the heavier rains came, they immediately ran off into the streams.

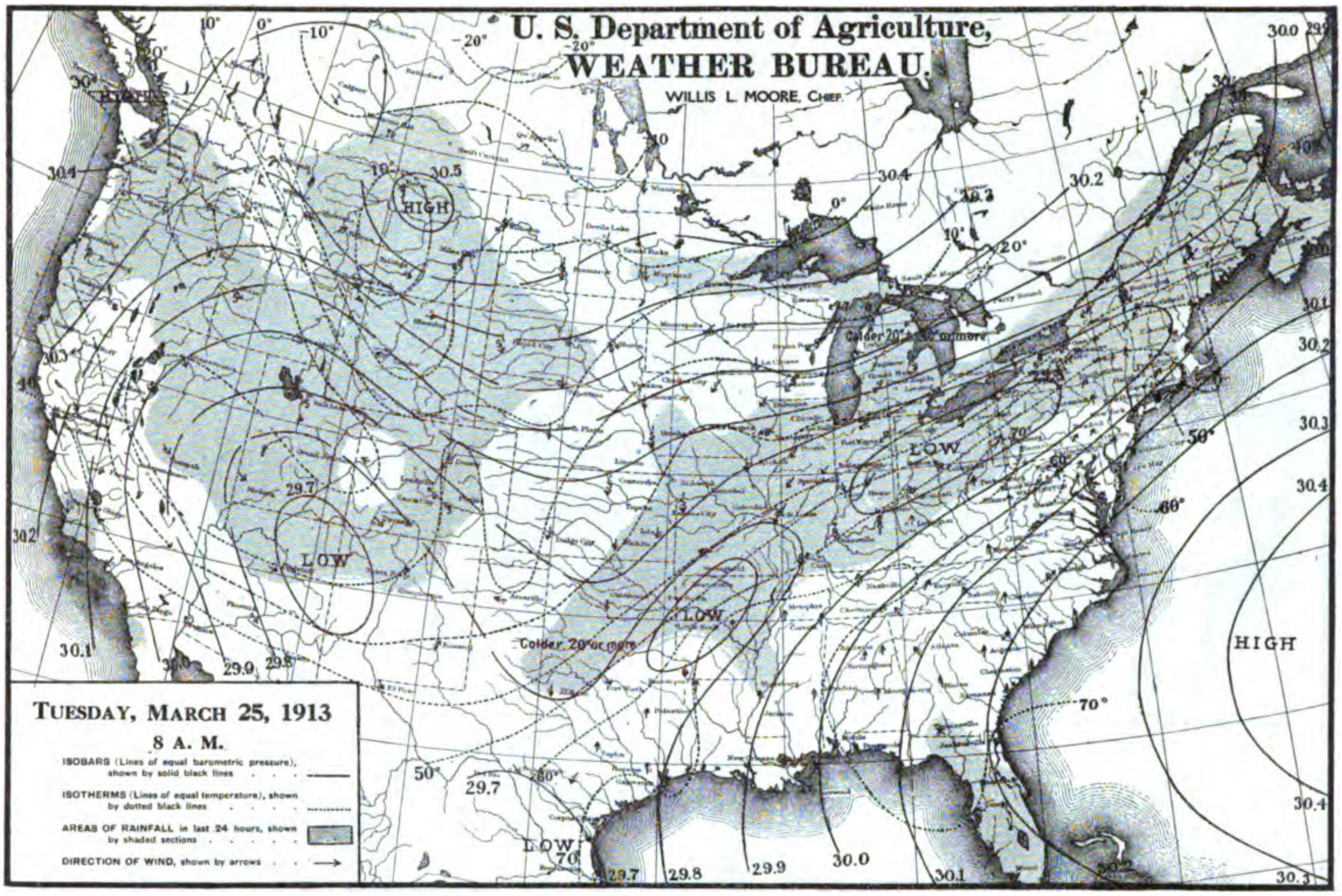
After this storm had passed off through the valley of the St. Lawrence, a storm of great intensity developed in the southwest. On the morning of Easter Sunday, March 23rd, this storm was central over Colorado, and in advance of it, rain was falling in Illinois and Indiana. It moved northeastwardly during the day, and, increasing in force, was accompanied near its center by a number of tornadoes, several of them of high velocity. One of these tornadoes did great damage in the city of Omaha, Nebraska, on Sunday evening, and others were experienced along the path of the center of disturbance, which continued northeastwardly, being in the Sault Ste. Marie on Monday morning, the 24th. As the storm advanced, the area of low barometric pressure, with an atmosphere moisture laden, covered the great central basin. Cold winds from areas of relatively high barometric pressure precipitated this moisture, and on Sunday afternoon and night rain was falling over the entire northern and eastern quarter of the United States.

Usually such a storm passes off through the valley of the St. Lawrence, and the low pressure is succeeded by a "high," with clearing and finally much colder weather. On this occasion, although the center of the storm took the usual path, there followed in its wake a "trough" of low pressure, and from day to day there continued to develop new "lows," or centers of disturbance, at the southwestern end of this trough. These "lows" followed each other through the valleys of the Mississippi and the Ohio, and each in turn dropped its moisture in rain as it was met by the cold winds from the "highs" in the northwest and southeast, which kept about the same relative position from Sunday the 23rd until Wednesday the 26th. On Wednesday the "high" advancing from the northwest succeeded in "pushing" the trough of low pressure eastwardly. The belt of heavy rainfall, which had for three days been continuously over the Ohio and lower Mississippi valleys, moved eastwardly and heavy rain fell through Pennsylvania, New York and New England on the 27th and 28th.

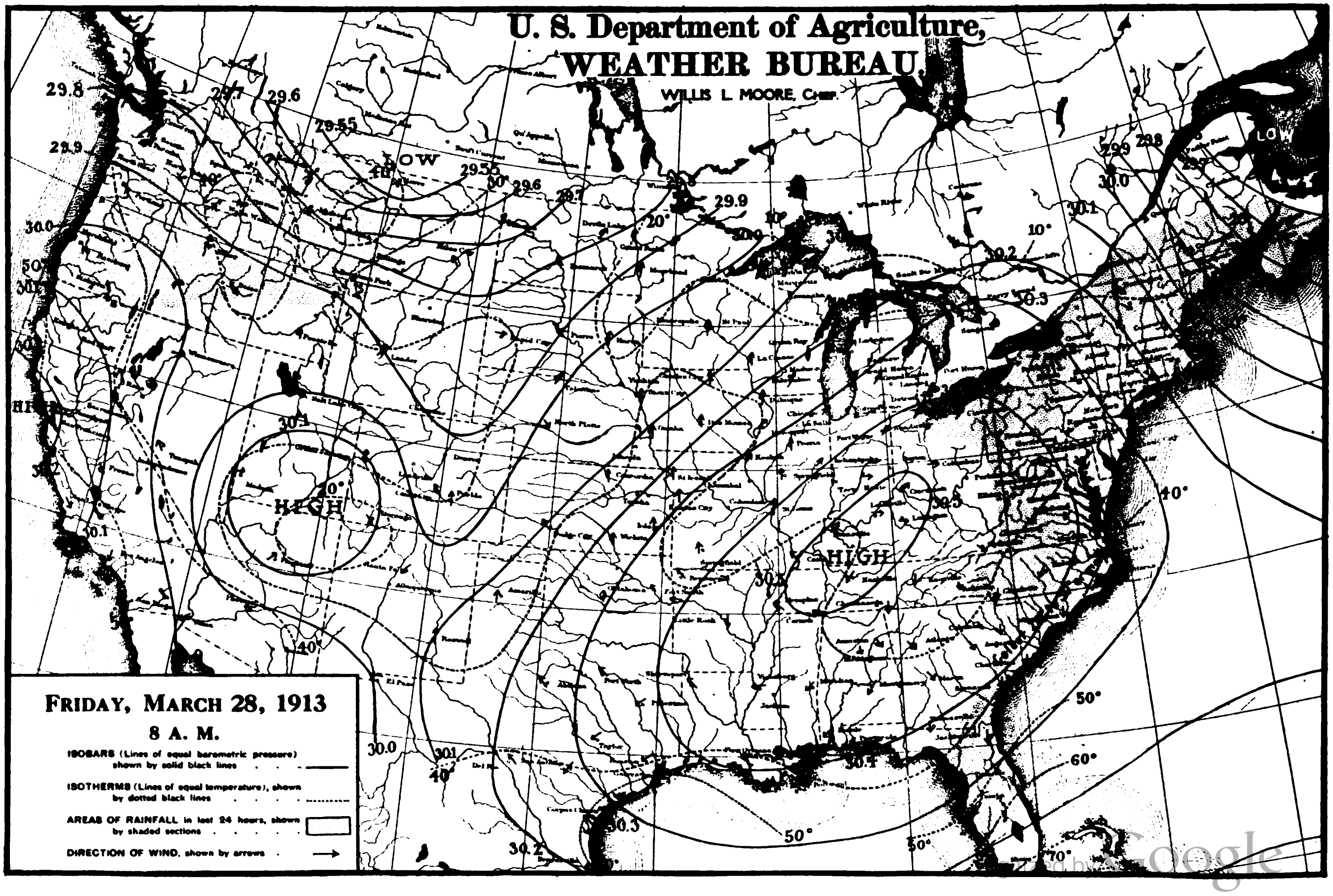
---

* Even before this history was completed, a flood, similar in all except that the the territory covered was very much less, struck the lines in southernmost Ohio,—see Chapter "Marietta Division."

This unusual combination of weather conditions can only be made clear by a study of the daily weather maps, and in order to make the sequence of events perfectly clear, maps for the six days from the 23rd to the 28th, inclusive, have been reproduced in smaller size on one page.


U. S. Department of Agriculture,
WEATHER BUREAU.
WILLIS L. MOORE, Chief.
HIGH
LOW
LOW
LOW
LOW
HIGH
Colder 20° or more
Colder 20° or more
ISOBARS (Lines of equal barometric pressure), shown by solid black lines
ISOTHERMS (Lines of equal temperature), shown by dotted black lines
AREAS OF RAINFALL in last 24 hours, shown by shaded sections
DIRECTION OF WIND, shown by arrows

TUESDAY, MARCH 25, 1913
8 A. M.


U. S. Department of Agriculture,
WEATHER BUREAU.
WILLIS L. MOORE, Chief.
LOW
LOW
HIGH
HIGH
HIGH
ISOBARS (Lines of equal barometric pressure) shown by solid black lines
ISOTHERMS (Lines of equal temperature), shown by dotted black lines
AREAS OF RAINFALL in last 24 hours, shown by shaded sections
DIRECTION OF WIND, shown by arrows

FRIDAY, MARCH 28, 1913
8 A. M.

To one not familiar with such maps an explanation of the departure from the normal may be acceptable.

Usually the isobars, or lines of equal barometric pressure, describe concentric circles, more or less regular, around the centers of high and low pressure. The winds blow from the areas of high pressure toward the areas of low pressure—winds from all directions meeting as they approach the center of the low pressure area, where the movement of the current of air is upward. For the portion of the United States through which the Pennsylvania Lines operate, the general course of the storms is almost invariably from the southwest toward the northeast. Whether these storms originate in the great northwest or the great southwest, they usually approach this territory from Missouri or Arkansas, and leave through the valley of the St. Lawrence.

The areas of low and high pressure succeed each other, in the spring season, usually at intervals of thirty-six to forty-eight hours—each "low," if the pressure be 29.9 or lower, being accompanied by rain.

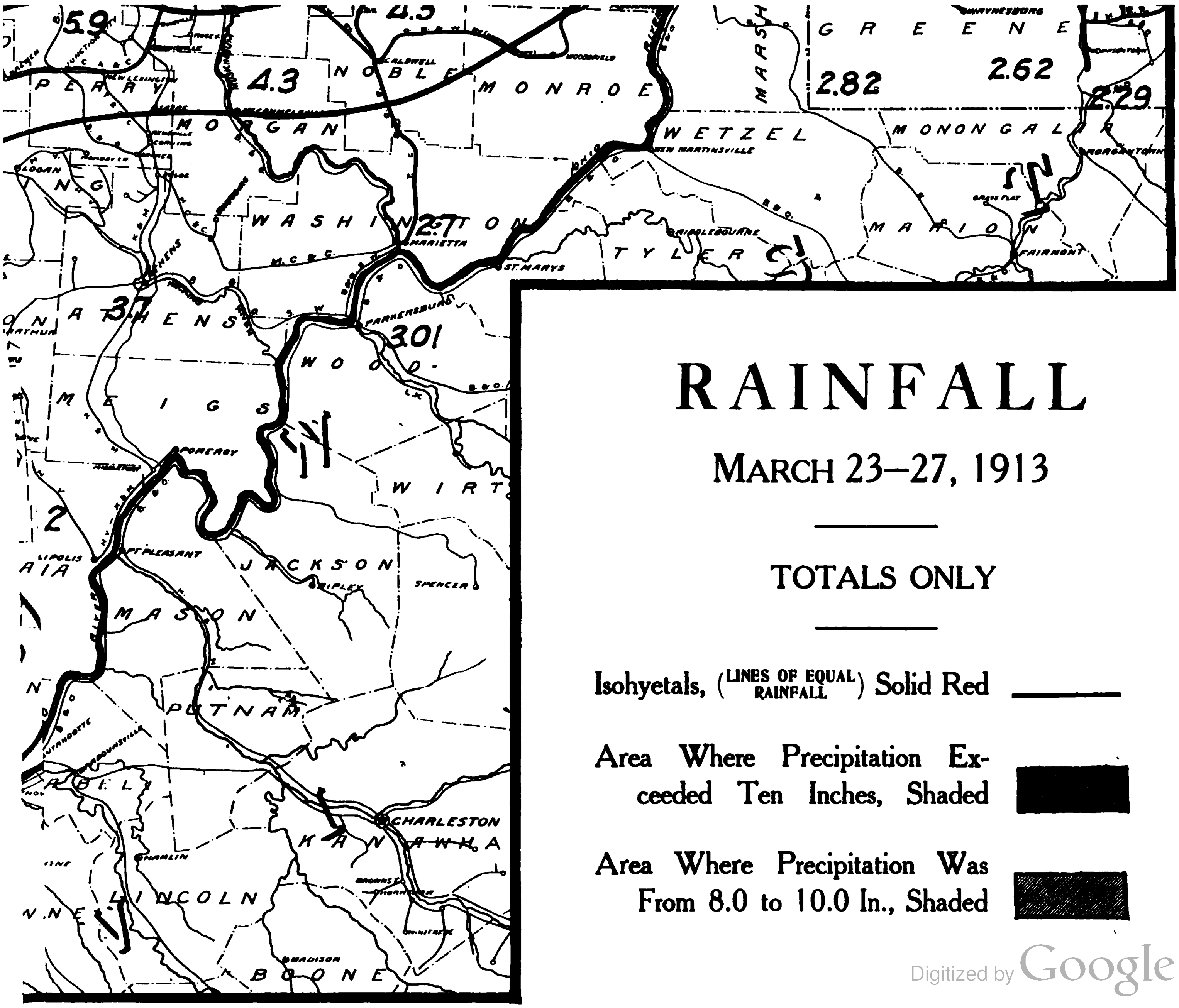
In a general way it may be said that these "lows" are formed by the expansion of air under heat, reducing the relative weight of a given volume of air, and incidentally increasing its hygroscopic properties. This occurs in and near the tropics, and, all conditions favoring rapid evaporation, the atmosphere accompanying a "low" becomes saturated with moisture. Conversely, the "highs" are probably formed by the condensation of the atmosphere in the cold upper strata and in the north. The intensity of a storm—the velocity of the wind and the amount of precipitation—are determined by the difference in pressure, and temperature, of the "highs" and "lows." The moisture carried by the "low" is precipitated where the cold winds from the area of higher pressure meet it. It is unfortunate that the information secured by the Weather Bureau does not cover the country south of our own borders, for in the absence of knowledge of the origin and early path of storms, or of the amount of moisture carried, it is impossible to predict how much precipitation will accompany them. In this instance the prediction made on Monday morning, the 24th, was, for Ohio and Indiana, "Unsettled weather, with rain or snow tonight or Tuesday; colder."

The storm of March, 1913, was unusual in that the original storm, instead of being followed by the usual "high," with clearing and colder weather, was followed by a continuous belt of low pressure (29.7–29.8), as a comet is followed by its "tail." The first "low" (29.3) was unusually low, and the difference in pressures between the high and low pressure areas, for the whole period, ranged from 1.0 barometric inch to as much as 1.5 inches. The rainfall through the states of Indiana and Ohio was from 5 to 11.2 inches in the four days from the afternoon of the 23rd to the 27th. The area of greatest rainfall was in Central Ohio, but the entire central valley was visited by rains heavy enough to bring all the rivers quickly to a flood stage.

The following tabulation of precipitation, by days, through the flooded district will, when it is remembered that the ground was already pretty well water-soaked, show why the rivers so quickly came up to unprecedented heights and then remained there for two or three days. A few representative gauging stations have been selected, and the figures for each day are given to show the distribution of rainfall over the period.

STATION	COUNTY	RAINFALL FOR 24 HOUR PERIODS ENDING 8:00 A. M. (INCHES)					
		SUNDAY, MARCH 23	MONDAY, MARCH 24	TUESDAY, MARCH 25	WEDNESDAY, MARCH 26	THURSDAY, MARCH 27	TOTAL
ILLINOIS.							
Cairo	Alexander	.04	.02	4.29	.24	.02	4.61
Chicago	Cook	1.16	.21	.13	1	0	1.50
Casey	Clark	1.17	1.58	1.31	.55	.18	4.79
INDIANA.							
Indianapolis	Marion	1.27	2.76	1.56	.34	.08	6.01
Richmond	Wayne	.88	5.30	4.17	.76	.04	11.15
Terre Haute	Vigo	1.05	2.45	.77	.19	.10	4.56
Fort Wayne	Allen	2.08	1.98	.69	.40	.21	5.36
Winona Lake	Kosciusko	1.73	1.54	1.18	.31	0	4.76
Columbus	Bartholomew	.07	.72	7.00	1.60	.53	9.92
Vincennes	Knox	.20	1.10	6.20	1.30	.60	9.40
Madison	Jefferson	0	2.49	1.78	2.65	.63	7.55
OHIO.							
Columbus	Franklin	.50	2.10	2.96	1.40	0	6.96
Wooster	Wayne	1.20	1.90	4.80	1.40	.80	10.10
Cincinnati	Hamilton	0	2.20	4.20	1.10	0	7.50
Dayton	Montgomery	.50	2.90	3.30	1.50	.80	9.00
Bucyrus	Crawford	1.40	2.10	3.40	1.60	1.20	9.70
Cleveland	Cuyahoga	1.90	1.50	2.70	.90	.20	7.20
Toledo	Lucas	1.90	1.80	1.79	.50	.20	6.19
Canton	Stark	1.00	2.20	3.00	1.60	.60	8.40
Bellefontaine	Logan	1.40	1.50	5.60	2.16	.50	11.16
Marietta	Washington	.20	.10	.70	1.30	.40	2.70
PENNSYLVANIA.							
Pittsburgh	Allegheny	.20	.72	.55	1.66	.38	3.51
Beaver Falls	Beaver	0	.59	1.65	1.79	.92	4.95
Sharon	Mercer	0	1.19	2.92	1.24	.84	6.19
Greenville	Mercer	0	1.34	1.11	3.74	.95	7.14

On a map of the Pennsylvania Lines West of Pittsburgh, the figures for total rainfall for the period have been shown for all points at which reliable observations were made, and an appendix gives a complete detailed tabulation of the rainfall, by days, over this territory.



RAINFALL

MARCH 23–27, 1913

TOTALS ONLY

Isohyetals, (LINES OF EQUAL RAINFALL) Solid Red ———

Area Where Precipitation Exceeded Ten Inches, Shaded ■

Area Where Precipitation Was From 8.0 to 10.0 In., Shaded ▨

The heaviest rainfall, it will be observed, was over the headwaters of three drainage systems crossed by the Pennsylvania Lines:

1. Great and Little Miami Rivers.
2. Scioto River.
3. Muskingum River.

Heavy rains fell over all the other watersheds, but in these three the amount of water was unprecedented, and the damage was greatest.

The average rainfall for Ohio and Indiana is from 35 to 40 inches per annum. In four days, therefore, one-fourth of a year's rain fell. But much more important is the relative run-off. Of the 40 inches of rain that falls each year in this territory, normally but 10 to 20 inches of water ever finds its way into the rivers; the balance is absorbed by the soil and is gradually evaporated, directly, or through growth of vegetation. With a rainfall of from 8.0 to 11.2 inches over the greater part of the central drainage basin, in about four days' time, the ground being already thoroughly wet, it is apparent that the streams were called upon to take away in less than a week as much water as is usually fed them in six months.

As a consequence, these rivers were higher than they were ever known to be before, the excess over previous high water marks at various points having been as follows:

RIVER.	LOCATION.	EXCESS OVER PREVIOUS HIGH WATER.
Great Miami	Piqua, Ohio	7.7 Feet.
	Dayton, Ohio	7.7 "
Little Miami	Kings' Mills, Ohio	6.5 "
Olentangy	Delaware, Ohio	15.7 "
Scioto	Columbus, Ohio	1.6 "
	Circleville, Ohio	4.9 "
Muskingum	Coshocton, Ohio	5.7 "
	Zanesville, Ohio	15.0 "
Sandusky	Tiffin, Ohio	7.0 "
Wabash	Logansport, Ind.	9.6 "
	Terre Haute, Ind.	3.8 "
White	Indianapolis, Ind.	4.4 "
	Anderson, Ind.	3.3 "

The damage sustained by the railway companies was of four general classes:

1. Undermining of bridge foundations, and washing out of fill at bridge approaches.
2. Washing away of bridge superstructure.
3. Washing away of fill in valleys where railways parallel streams.
4. General damage to track, buildings, telegraph lines, etc., from being covered with water.

In the rapidly rising water, there were carried great quantities of driftwood, logs, hay, trees, buildings—even houses and barns—and these lodged against bridge piers and superstructures and obstructed the stream flow. In many cases the force of this deflected current scoured out the bottom of the stream so deeply as to undermine piers and abutments. In other cases relief came from the approach fills washing out and widening the channel; in many cases the bridge superstructure was pushed into the stream.

The undermining of bridge piers and abutments was typical, occurring to bridges of all railroads alike, and to county and city bridges as well, throughout the watercourses of the three principal drainage basins of Ohio, south of the main watershed, which is shown by dotted line on "Relief Map" (last page). Why, then, have the railroads and municipalities not followed the biblical injunction to found their structures upon the rock, where the vehement beating of the streams could not disturb them? Because, where the railroads cross the rivers and creeks, bed rock is usually from one hundred to four or five hundred feet below the ground surface level of the immediate river valley, and, although a few hundred yards on either side the rock may be plainly in evidence, it is impossible to reach it in most of the valleys. The explanation of this unusual condition is found in the geological history of the country.

At one time the drainage system seems to have been greatly different from that of today. The upper Ohio, for instance, doubtless flowed through the valleys of the Beaver and Grand Rivers into Lake Erie, directly opposite to its present flow. The Muskingum flowed westwardly, from a few miles below the junction of the Mohican and Tuscarawas, to what is now the valley of the Scioto. The basin now drained toward the Great Lakes and the St. Lawrence extended much farther south than it does today.

Later, ice sheets, pushed southwardly by pressure of the weight of snow falling constantly in northern latitudes, covered most of the states of Indiana and Ohio, the approximate limit of travel of the sheet which came farthest south being shown on the "Relief Map" of Ohio. In Indiana, only a small portion of the southern portion of the state escaped. The advance of these ice sheets ground and pushed off the tops of the pre-glacial hills, and with the debris filled up the valleys, leaving the surface a comparatively plain, smooth tableland.

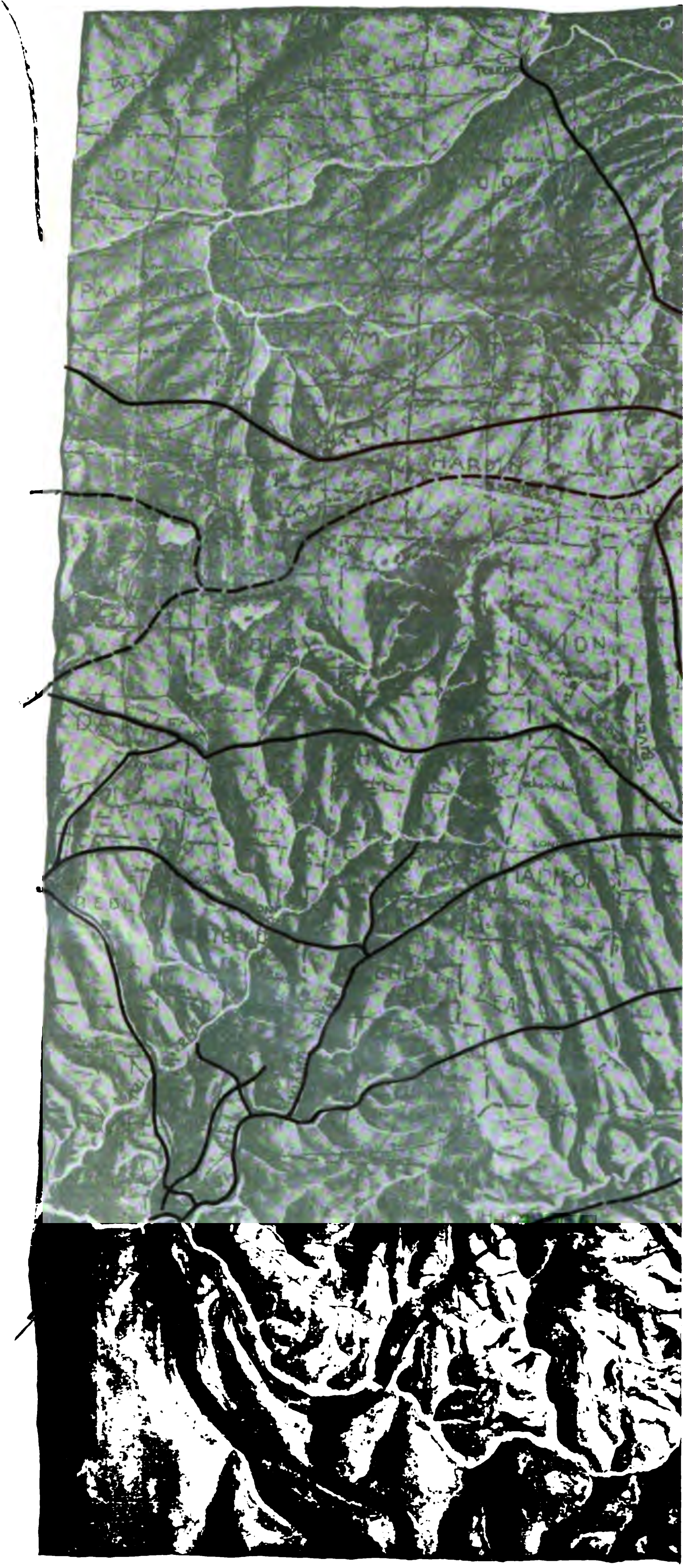
Before the advancing ice, which was probably several hundred feet in thickness, the water was ponded until it overflowed the divides and cut for itself new channels to the south and west, forming the valleys of the present drainage system.

But the streams of the ice age were torrents which cut channels wide and deep. As the ice was melted great volumes of water were liberated, accompanied by more or less loose ice, and it appears that in a great many valleys glaciers alternated with streams. The new channels cut were usually from one to three miles wide, and from three hundred to eight hundred feet deep. In subsequent ages, these valleys were gradually filled to their present level with gravel, sand and silt, by erosion from the surrounding hills, and by the washing down of the material carried by the ice in its original advance. The streams of today, usually mere rivulets in comparison, wind and turn through these wide, level, glacial valleys, in beds more or less subject to change at the caprice of each freshet.

Some years ago it was thought sufficient to take bridge foundations down in this comparatively recent material to a firm layer of gravel, or, where this could not be easily reached, to support them on piles. The scouring of the present flood undermined bridge foundations of both classes, and has revealed the places where they were not sufficiently deep and demonstrated the necessity of going very deep with foundations for bridges in these glacial valleys, using piling under the masonry when there is any doubt as to the stability of the material encountered.

The third class of damage was sustained where the railways parallel streams, particularly where the tracks are upon fills. These fills acted as levees until the water overran them, when they became earth dams, as the culverts ordinarily providing outlets for ditches and creeks into the larger streams were as a rule not large enough to permit the passage of enough water to the back of the fill to keep the level on both sides equal, owing to the very rapid rise of the rivers. When the water overran the top of the fill, the bank was very quickly washed away, often taking tracks and all with it, and in many instances the track was turned upside down in the adjacent fields. Cars standing on tracks thus undermined usually toppled over into the stream. When the rain ceased and the water went down, the fall was so rapid that the action was just reversed. The water-soaked banks gave way with the receding waters where they had successfully held the rising flood, and in many places the fill and tracks were washed *toward* the streams. Culverts were undermined and their approaches washed out under these conditions in much the same way as the bridges over the main streams were damaged by the principal currents. Many miles of track were saved from serious damage (where the water level was not much over the rails) by stone ballast, which kept the top of the fill from washing.

The fourth and last class of damage was suffered alike by the railways and the entire population of the flooded district. Everywhere the water left great quantities of mud and debris in those buildings which were not bodily carried away by the flood. Telegraph and telephone lines were washed away or broken, so that communication was interrupted throughout the entire district. Water and lighting plants were put out of commission. Exposure to continued rain and cold and the dirt and filth deposited everywhere will be followed by an unusual amount of sickness, and the whole cost of the flood will never be known.


UNION
RIVER

DEF ANC
PA
HARD
MARIO
UNION
RIVER
ADISO

CHAPTER 2.

MARCH 24–25, 1913.

The rain which had started on Easter Sunday, the 23rd, began first to do damage to the property of the Pennsylvania Lines West of Pittsburgh in the vicinity of Piqua, Ohio, in the early morning of Monday the 24th, the water coming up to the track level there, and at several places in the vicinity of Richmond, Ind., at about the same time, and, a little later, along the east end of the Logansport Division. In the afternoon, reports began to come in of landslides in the hills of Eastern Ohio, and of serious interruption of telegraph and telephone service by high water all over the System.

On Monday afternoon and night the rain was the hardest ever recorded at many points over the system. In the 24 hours ending at 8.00 a. m. Tuesday the 25th, 7.00 inches fell at Columbus, Ind., 5.70 inches at Cambridge City, Ind., 4.4 inches at Greenville, O., 4.8 inches at Wooster, O., 3.6 inches at Tiffin, O., and throughout the States of Indiana and Ohio the fall was unusually heavy.

At 4:35 P. M. Monday the 24th, both tracks at Lucas, Ohio, Eastern Division, were washed out and after No. 16 of that date, not a through train went over the Eastern Division for ten days. That night water came up to or above previous flood levels in every stream in Ohio and Indiana, and the Flood of March, 1913, was fairly inaugurated.

The early morning of Tuesday the 25th brought reports that the tracks were covered with water or were badly damaged at scores of places, over the entire system, with service interrupted all through the belt of heaviest rainfall (shaded red on the rainfall map, Chapter 1). As the very high water had not yet gotten far enough down the streams to interfere with service between Columbus and Pittsburgh, the night trains of the Ft. Wayne route of March 24th were brought to Pittsburgh from Crestline to Columbus over the Big Four, and from Columbus in over the Pan Handle. Some of the westbound trains were sent to Chicago over the same route and some via the C. & P. to Cleveland and the Big Four to Crestline. By the time No. 29 arrived at Columbus, however (4:20 A. M., 25th), all the routes from there to Chicago had been broken. This train was returned to Pittsburgh, and later sent to Chicago via Cleveland, and the Lake Shore road from there to Clarke, Ind.

Trains which were enroute on the night of March 24–25 over most of the system were marooned wherever they happened to be when they came to an impassable piece of road,—some at stations, some in the open country; some high and dry, some where they were surrounded with water. No. 13, on the Pan Handle, got as far as Dayton. when news was received that the line was broken in advance, and efforts were made to find an open detour line, but without result, and No. 13 stayed at Dayton Union Station until the waters receded five days later. The story of the rescue of passengers from this train is told in a later chapter.

No. 3 was started north from Urbana over the Big Four, but at West Liberty, where that railroad crosses Mad River, the engine and one sleeper went down with the bridge, the engine going into the water and the sleeper being partly submerged. All passengers were gotten out of the sleeper, but a brakeman riding in it was drowned, and seven passengers and employees were injured. (Photo on page 18.)

This happened at 1:30 A. M. of the 25th, and about two hours later, a work train, enroute from Bradford to a washout at New Madison, O., with twenty laborers, encountered another washout at Bridge No. 58, over Dry Run, west of Gettysburg, O., which went down with the rear of the train, four cars and the cabin going into the water, drowning the gang foreman and five of his men and injuring all the other workmen, as well as the conductor, flagman and brakeman. A photograph of the situation, with cars still in the creek channel, will be found in the Indianapolis Division chapter.

In many places the water had either submerged the telegraph and telephone lines, or broken them with debris, or washed away the poles, so that communication was either entirely cut off or was only intermittently possible over much of the system. Reports of the situation were therefore fragmentary and often inaccurate, and it was difficult to form any idea of the extent of the damage.

It was definitely known on Tuesday morning (25th), however, that service had been interrupted as follows:

Eastern Division: By washouts at Lucas and Lawrence, and a number of bridges damaged between these points.

Western Division: By washouts at Middlepoint and Upper Sandusky.

Erie & Ashtabula Division: By water over tracks in the Mahoning, Shenango and Beaver River valleys, and on W. N. Y. & P. Branch.

Toledo Division, Sandusky Branch: By water over tracks at Delaware, and numerous small washouts.

Akron Division: By washouts at numerous places between Barberton and Mt. Vernon.

Indianapolis Division: By water over tracks and washout east of Piqua; by bridge west of New Paris washed out, and by washout and landslides between Richmond and Dublin.

Cincinnati Division: By washouts between Dayton and Richmond and water over tracks between Xenia and Morrow.

Louisville Division: By water over tracks between Columbus, Ind., and Edinburg on the main line, and between Columbus and Shelbyville on the Cambridge City Branch.

Vandalia Railroad. By water over tracks and washouts on the Vincennes Division.

G. R. & I. Railway: By washouts between Richmond and Ft. Wayne.

As further information came in, it was found that the situation grew more serious every hour. During the day, report was received of additional interruptions of service as follows:

Logansport Division: Water over tracks at Logansport and west to Kenneth, with a concrete bridge washed out on the old line near Royal Center, blocking both routes to Chicago; and by washouts at Mississinewa River bridge east of Ridgeville.

Richmond Division: Four or more bridges down between Camden and Hamilton.

Indianapolis Division: Water over Olentangy River bridge at Columbus, and Scioto River bridge out of line; water over tracks at Urbana.

Cincinnati Division: Miami River bridge at Dayton, west spans out; water over tracks all through Dayton.

Pittsburgh Division: Water over tracks in P. M. at a number of points; bridge over cattle pass east of Conesville washed out in evening, and at 10:15 P. M. two spans of the west end of the bridge over Muskingum River (Br. 100) at Tyndall went out.

Marietta Division: Water over tracks at many points, with land slides and washouts at a number of places.

In the afternoon of the 25th the Weather Bureau Office at Pittsburgh sent out warning that, in view of the heavy rainfall and the prospect of a continuation of it through Indiana, Ohio, and Pennsylvania for the balance of the week, the rivers would doubtless exceed all previous high water marks. Reports coming from all sides of damage to railroads, and to cities and towns, indicated that no routes would probably be available for several days for the through trains, except by long detour, and arrangements were made to represent the more important schedules for local service.

In the evening, the General Manager of the Pennsylvania Railroad proffered the aid of men or material as might be needed, but in the absence of actual knowledge of the extent and nature of the damage sustained, definite acceptance of the offer had to be deferred until the following day.

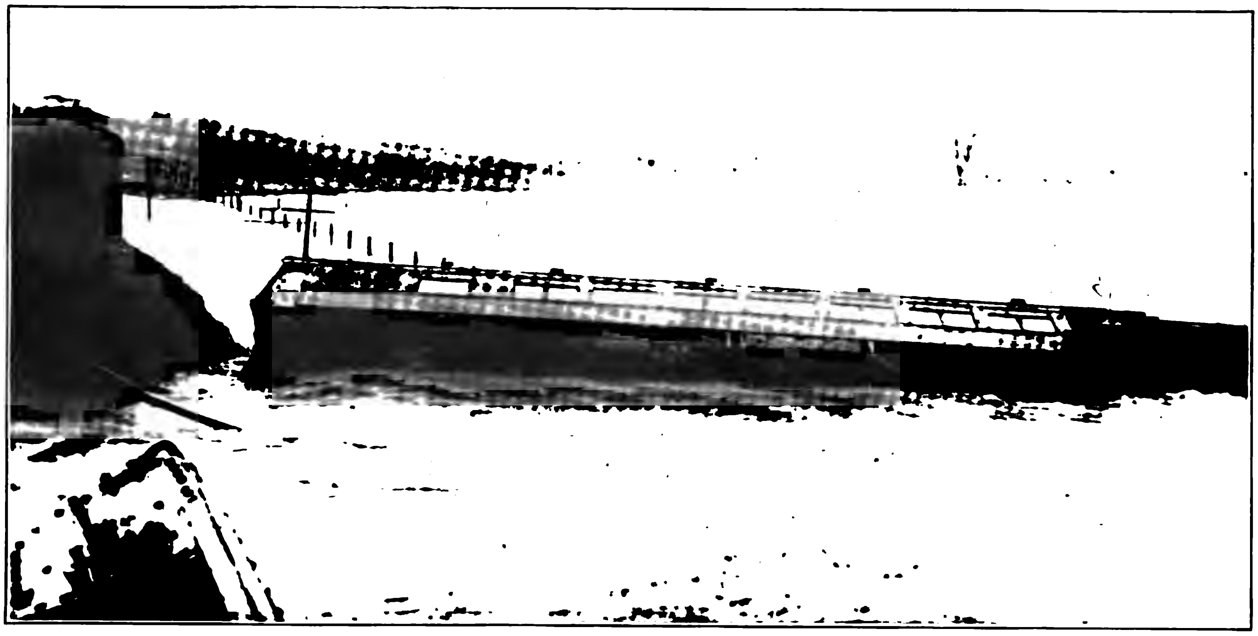
Night came on with rain still falling in torrents over practically all the territory traversed by the Pennsylvania Lines. The water began to fall a little at the headwaters of the streams, as the rain was not quite so heavy, but in the main channels it continued to rise all night, as the high water from above was augmented by that from the swollen tributaries.

In the absence of definite information as to the extent of damage or the amount and character of repair material needed, officers in Chicago arranged in the afternoon for several cars of piling and bridge timbers for immediate shipment, and borrowed a pile driver from the Chicago and Western Indiana Railroad, fitting up a commissary train to accompany it, as well as another complete train, both of which might be sent where needed. Arrangements were also made at all points to secure as much stone, slag, cinders and other filling material as could be found, arrangements for its distribution being deferred until it was known where it could be used first to best advantage.

In the afternoon the Passenger Department issued a circular to all ticket agents, instructing them to sell tickets for points in the flooded district subject to delay, passengers to be so advised.

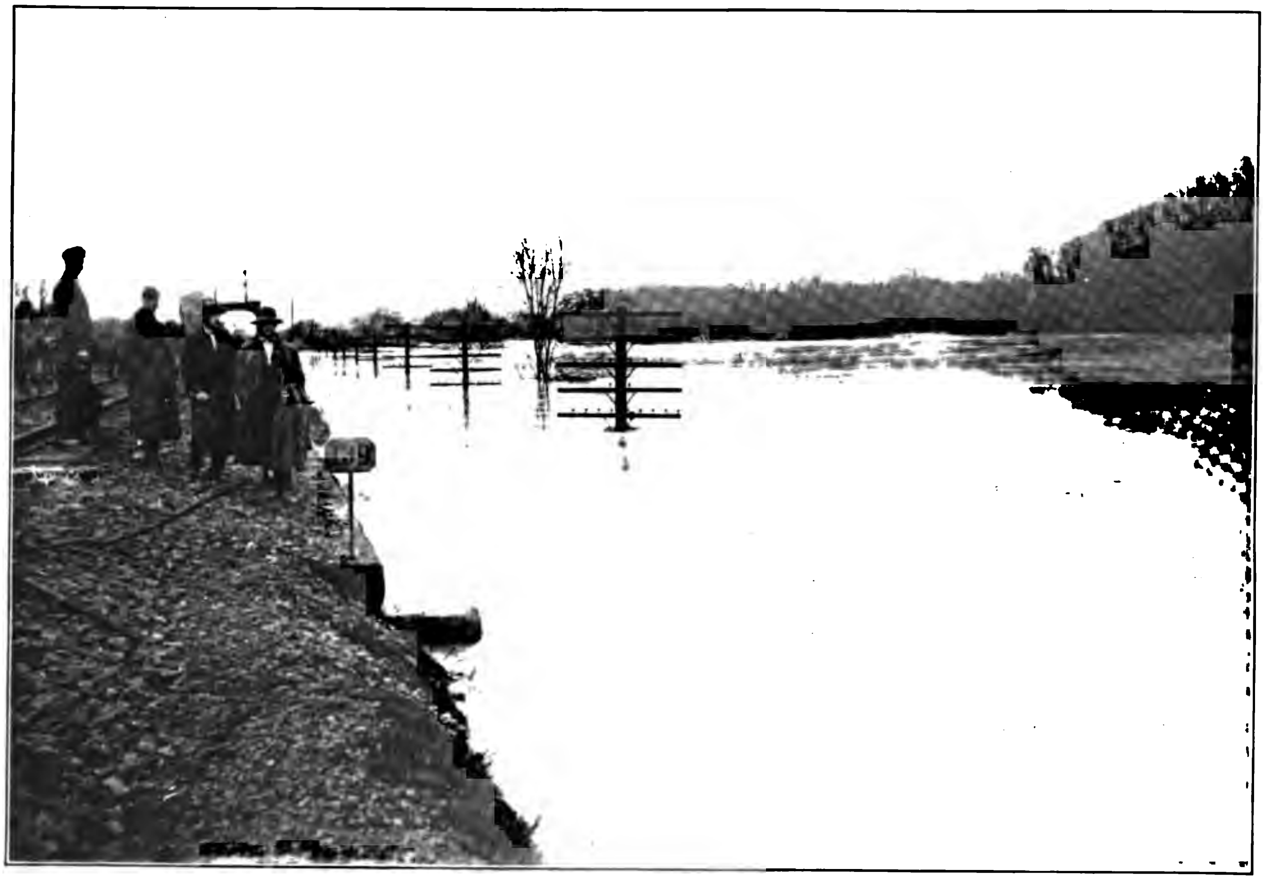
On account of the storm, very few photographs of the flood were made by the residents of the flooded country, most of whom were busy saving themselves or their effects, or those of their neighbors, and such photographs as were made were usually poor for lack of light. This same condition existed for two or three days, while the flood was at its height, but a fairly representative number of pictures of the conditions as they existed have been secured and have been included with the chapter for the day on which they were taken.

The map which follows shows the situation on the Pennsylvania Lines West of Pittsburgh for March 25th, and is self-explanatory.



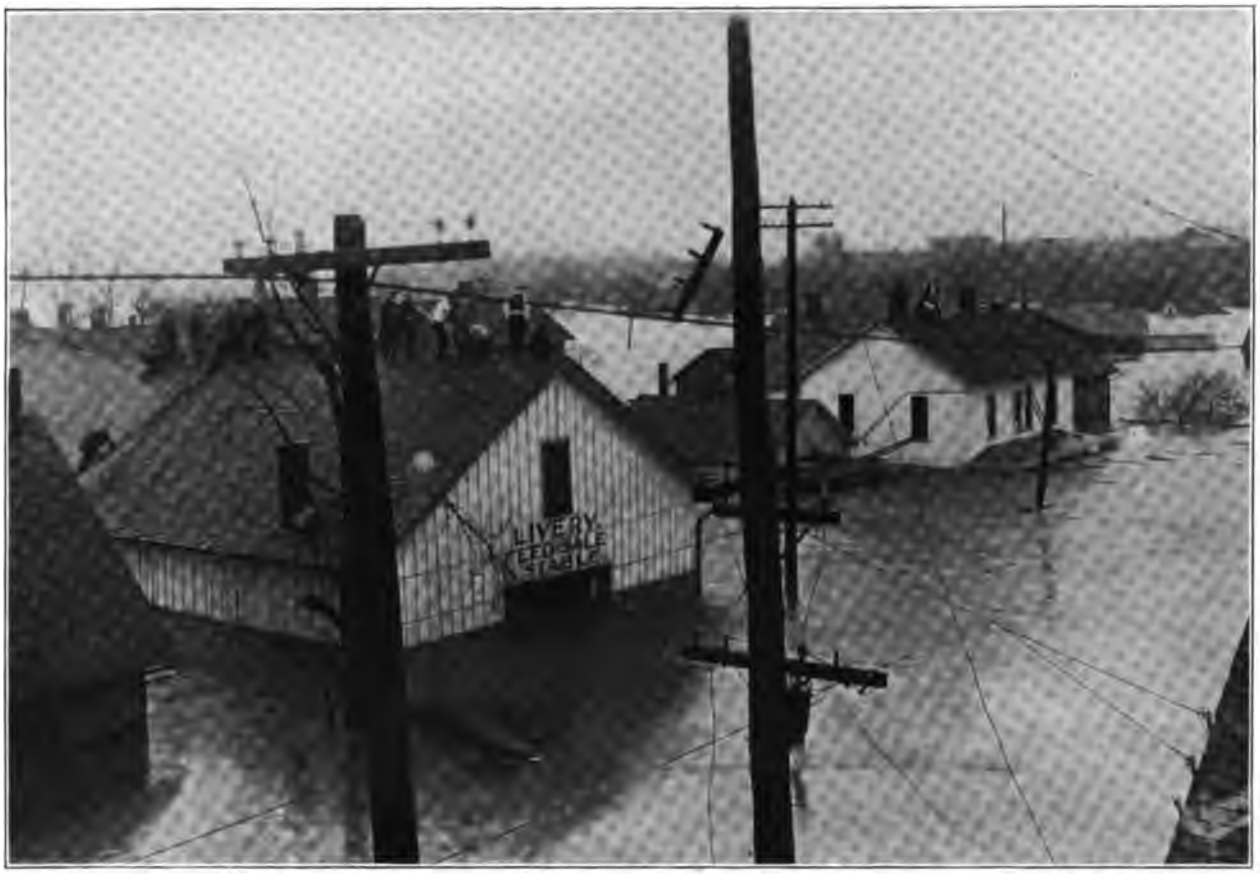
West Liberty, Ohio. Wreck of No. 3, of March 24-5, 1913.

No. 3 was detoured north from Urbana over Big Four Railway, but at West Liberty the engine, backing, went into Mad River, and one sleeper, which followed it, lodged on its side on the river bank. Tank visible, but engine completely submerged.



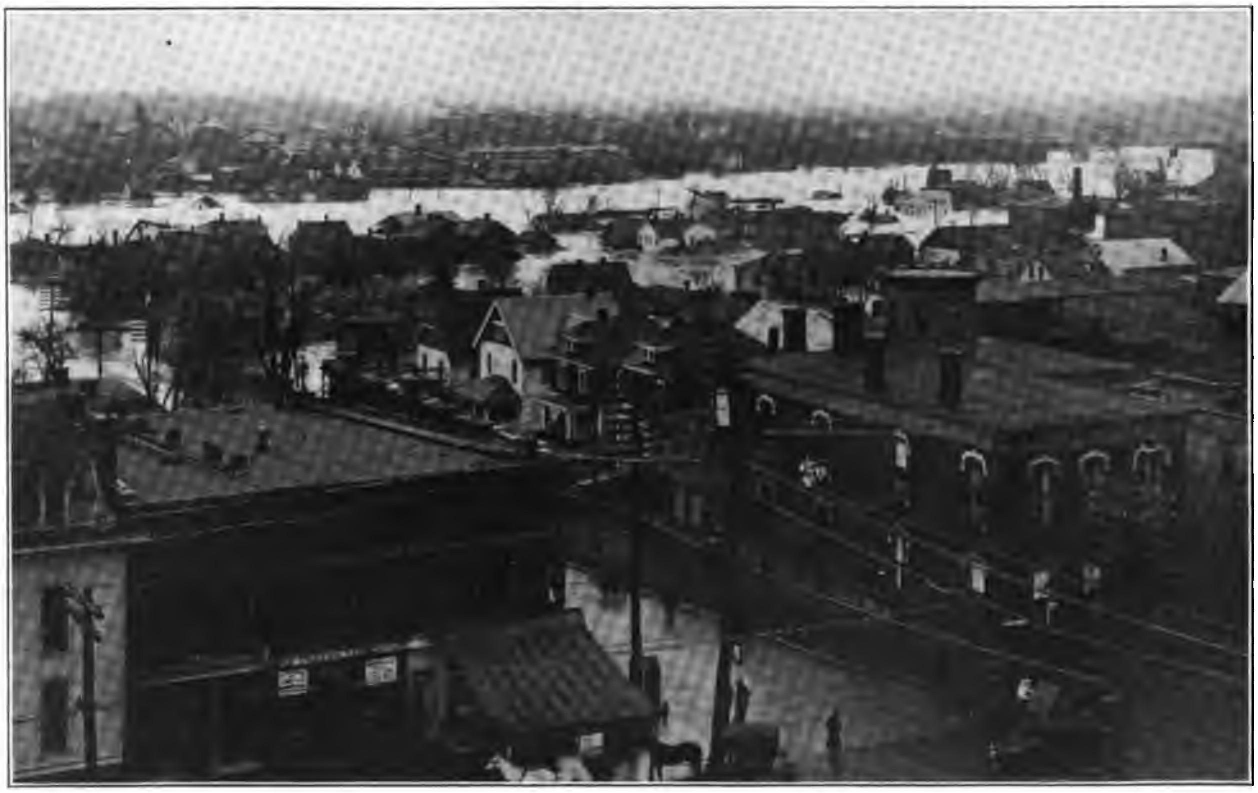
Loudonville, Ohio, west of March 25, 1913.

Bridge 139, Eastern Division, "Double Barrel" stone arch over roadway and mill race, later washed out. The stream which parallels the railway is the Black Fork of the Mohican River.



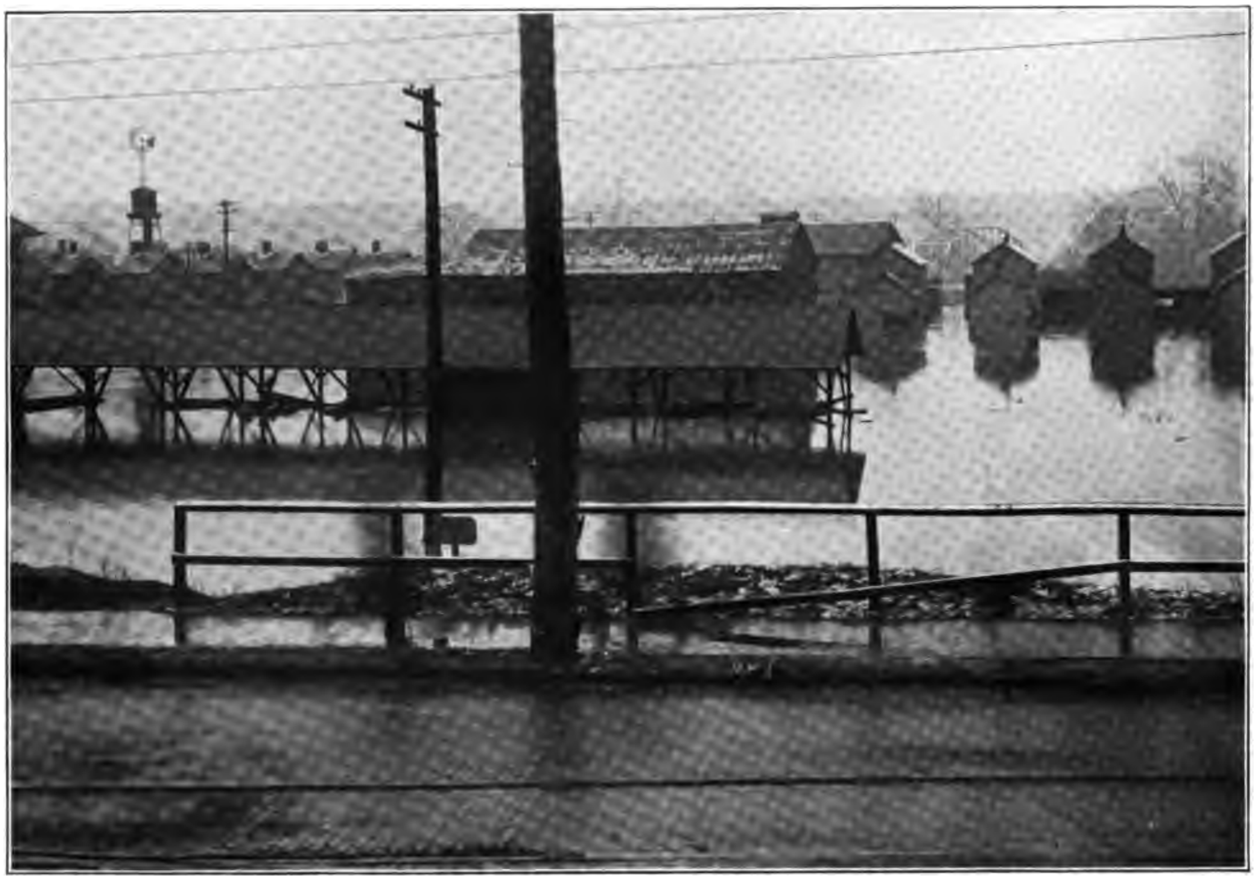
Delaware, Ohio. March 25, 1913.

Pennsylvania Lines Passenger Station just over treetops at right of picture, with water at eaves of shelter shed. The livery barn in the foreground collapsed shortly after, and one or more of the persons on it were drowned.



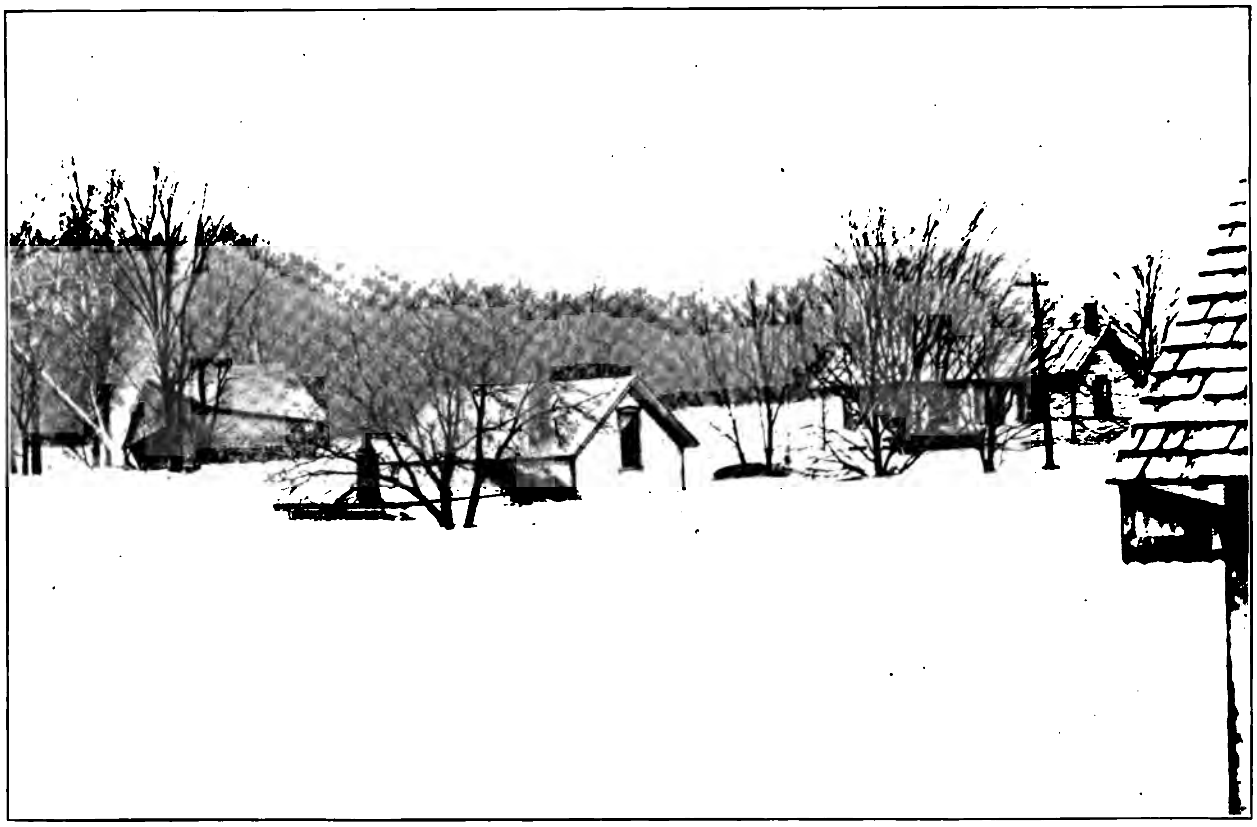
Delaware, Ohio. March 25, 1913.

Looking east from Main Street. Pennsylvania Lines freight house and water tank may be distinguished by an X marked over them.



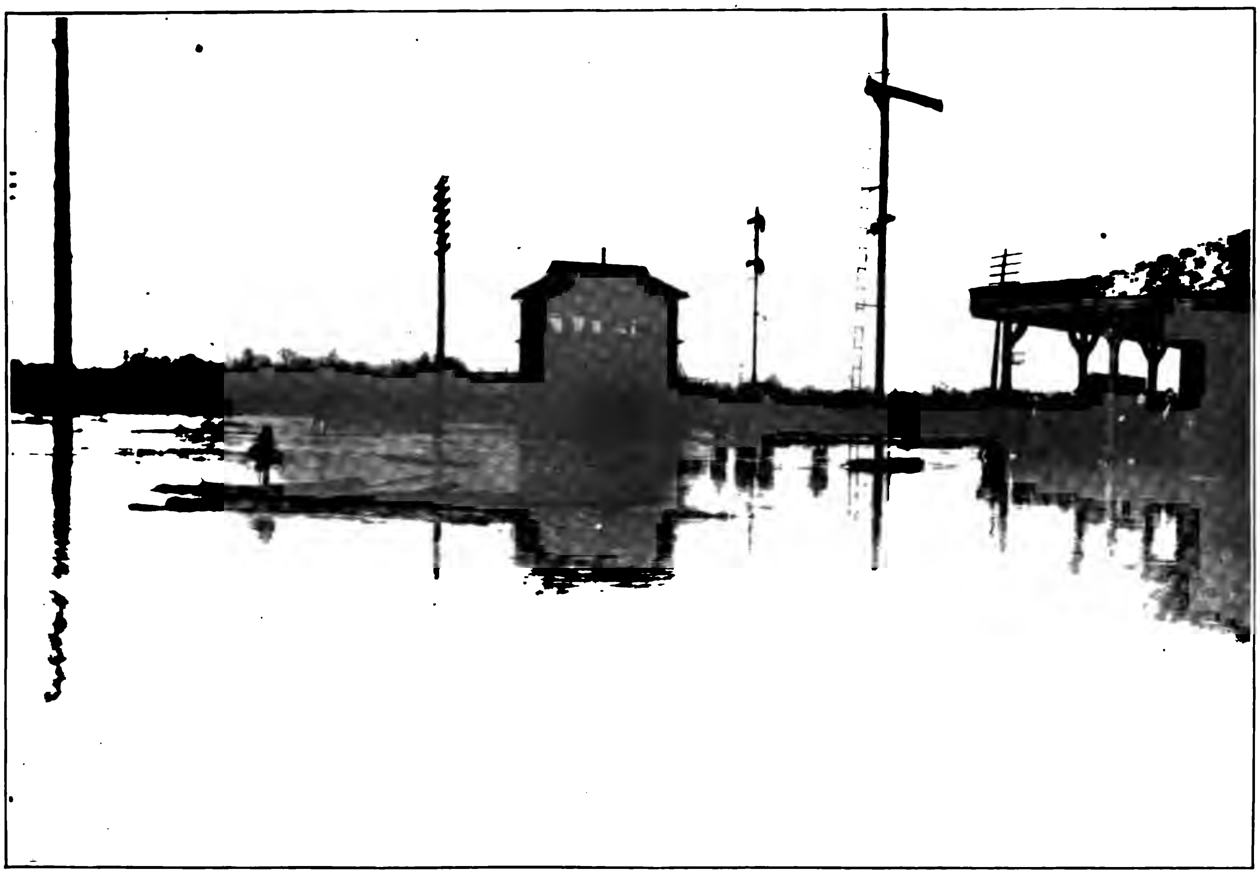
Sharon, Pa. March 25, 1913.

West side Shenango River, near Budd Avenue.



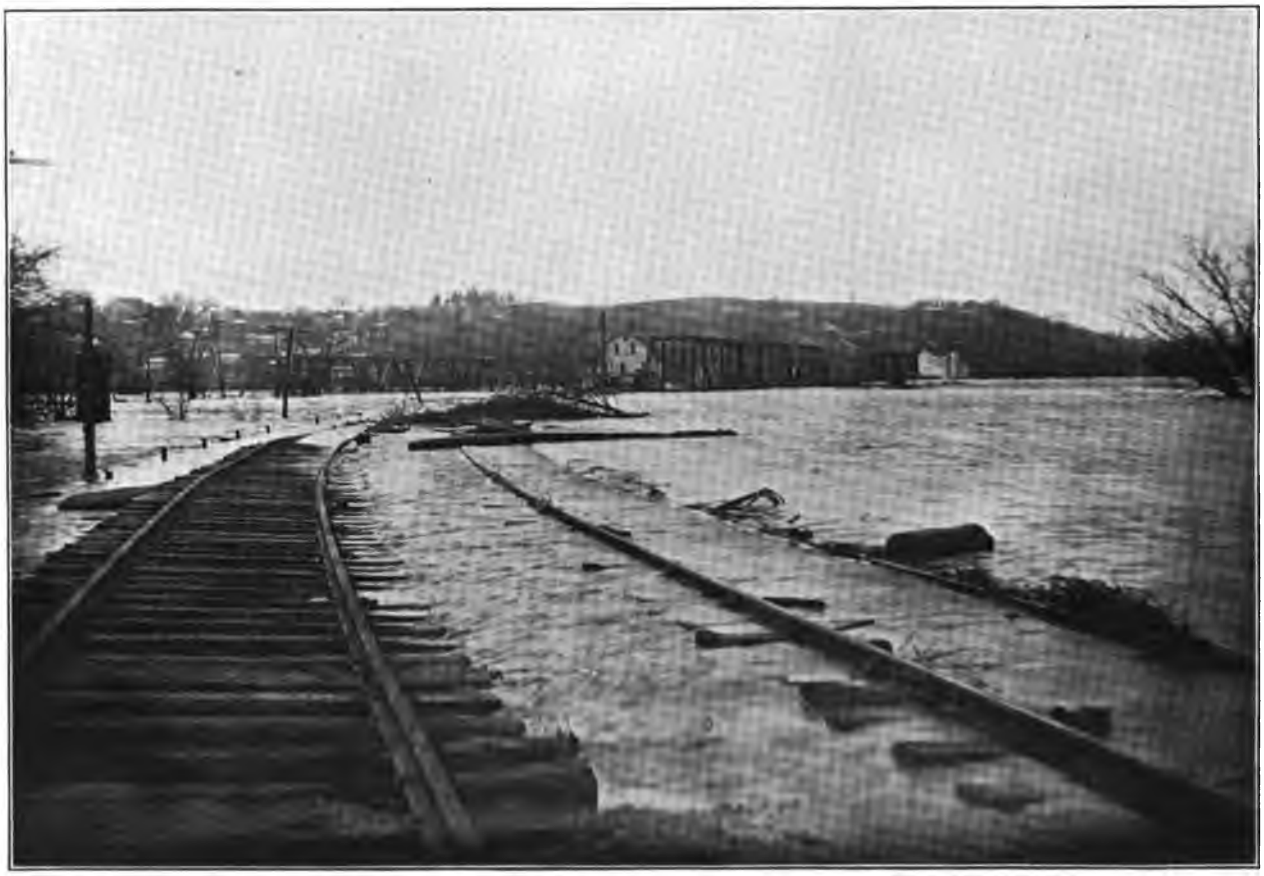
Brink Haven, Ohio. March 25, 1913.

Looking across Mohican River valley, just above Akron Div. Bridge 68, both approaches to which were washed away.



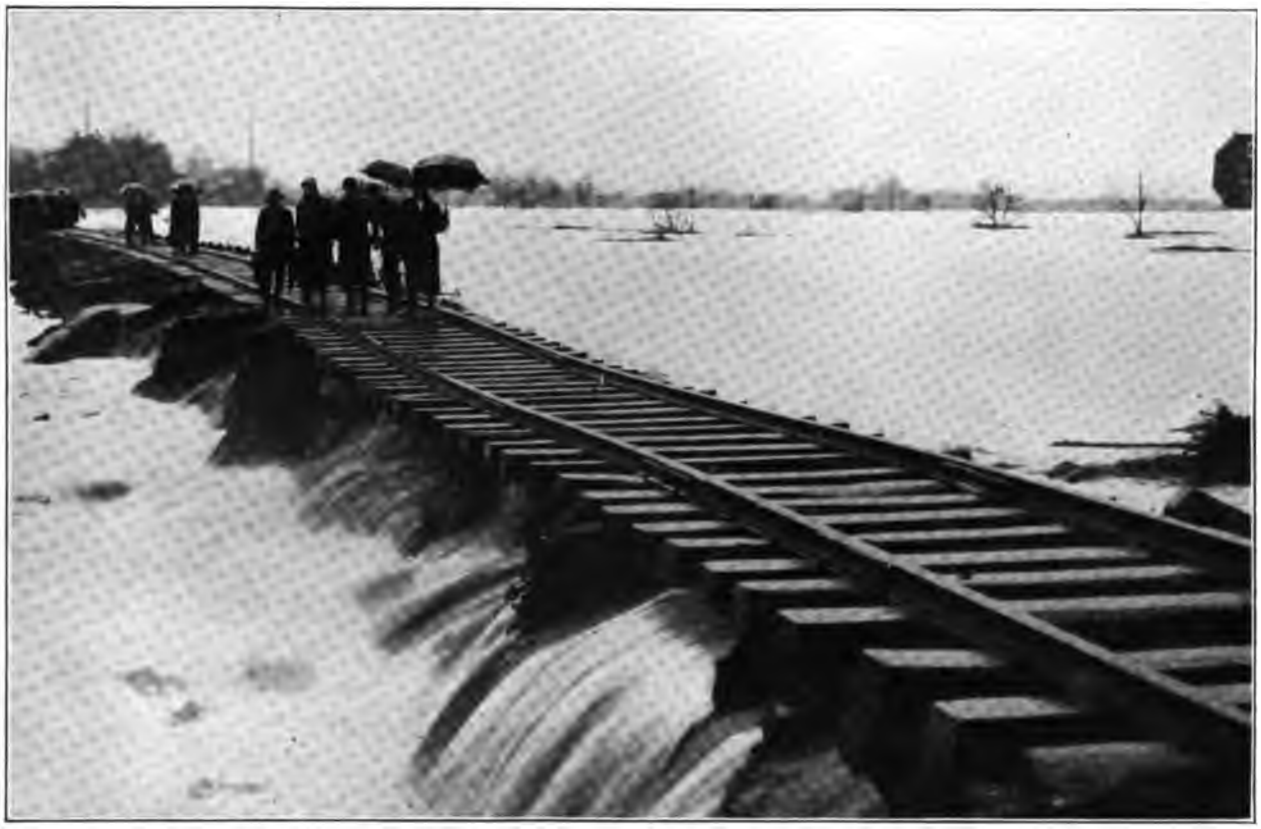
Mansfield, Ohio. March 25, 1913.

Union Station and interlocking tower; Erie Crossing under water.



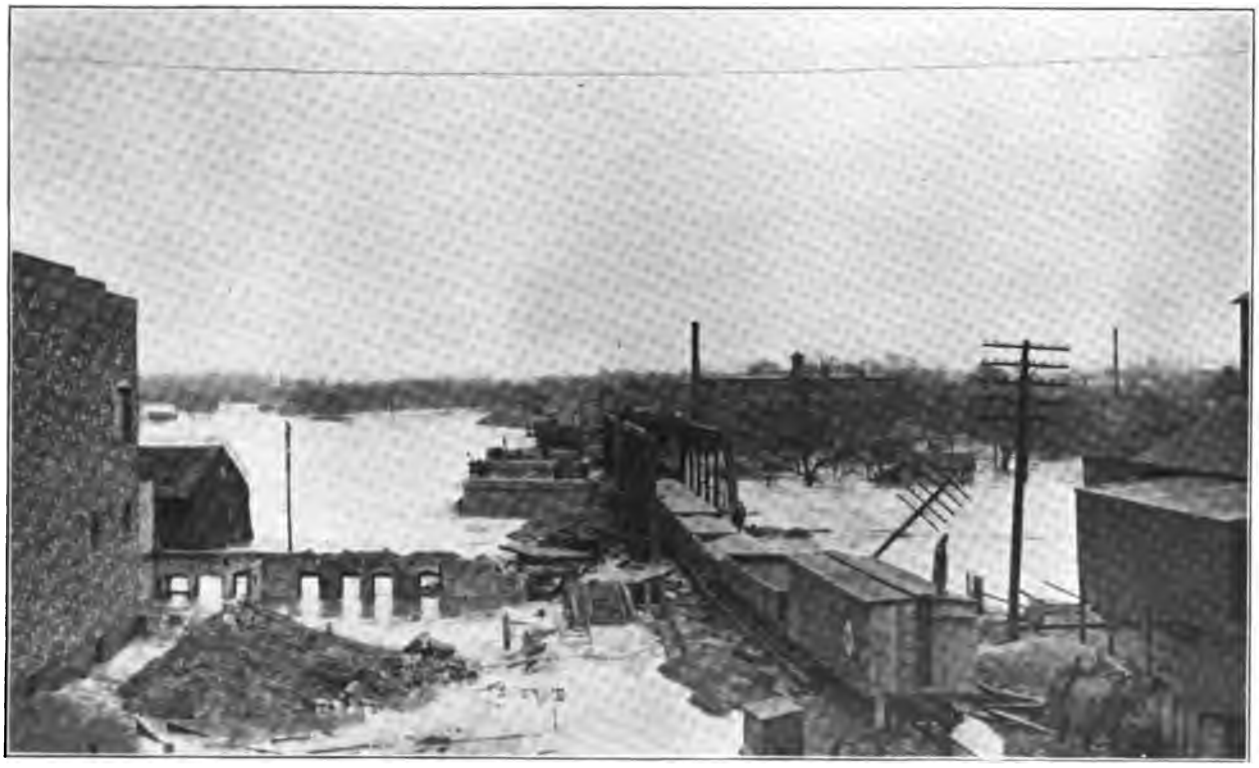
Coshocton, Ohio, March 25, 1913.

Junction of Walhonding and Tuscarawas Rivers, forming the Muskingum. Trestle over lowland between Bridges 1 and 2, Walhonding Branch (about 1,200 feet), and approach to Bridge 1, where brush is over track in foreground, later washed away.



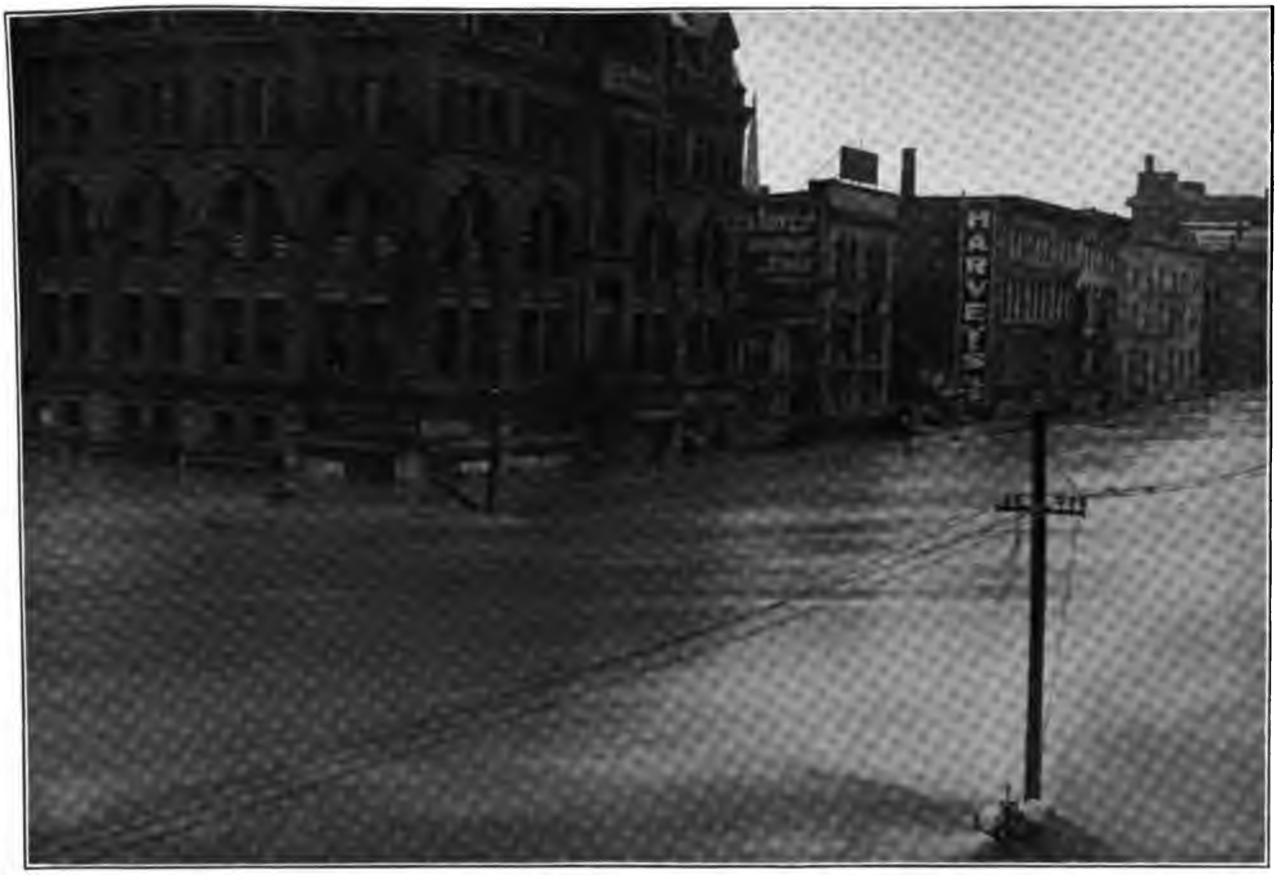
Mount Vernon, Ohio. March 25, 1913.

South of station; waters of Kokosing River pouring through fill of Akron Division main track.



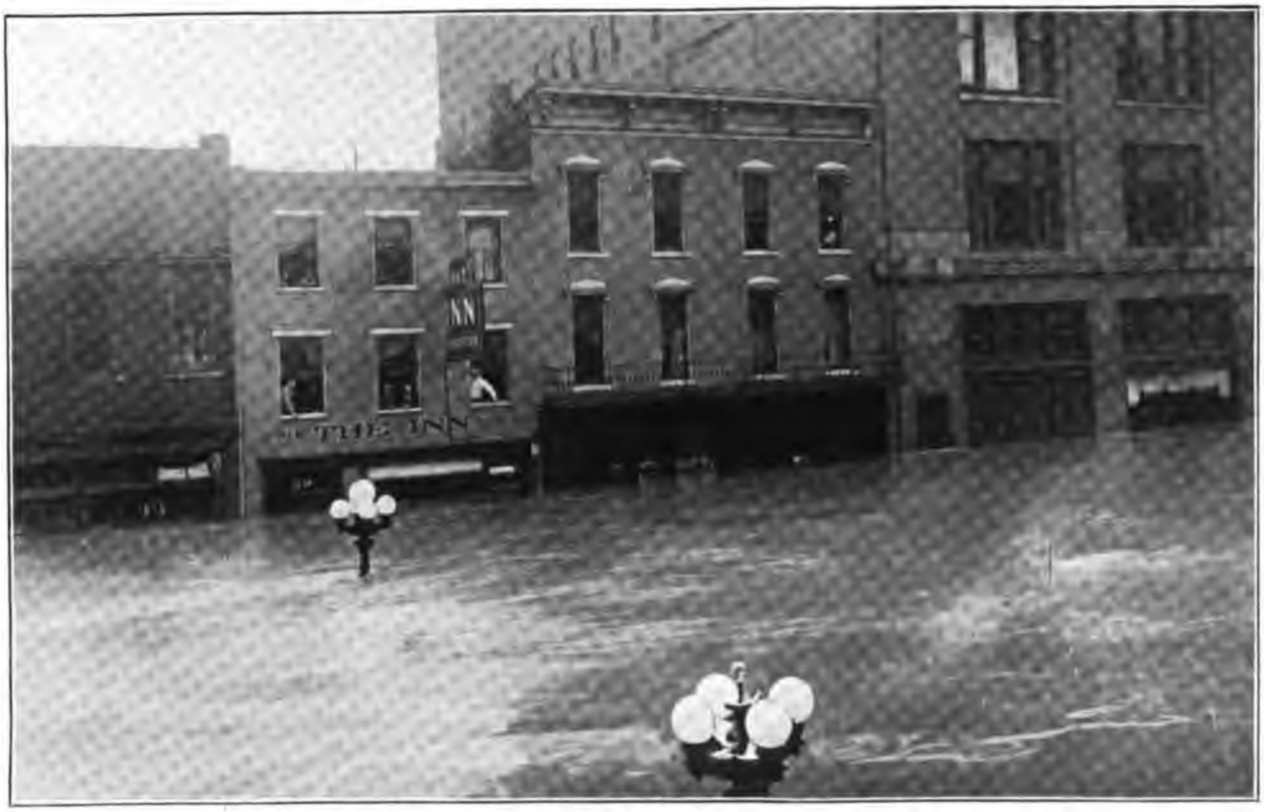
Piqua, Ohio; Bridge 50. March 25, 1913.

When water was at its highest; Pennsylvania Lines employees on concrete piers for new bridge being erected in connection with track elevation work, doing what they can to rescue people floating down against bridge. View east on north side of bridge.



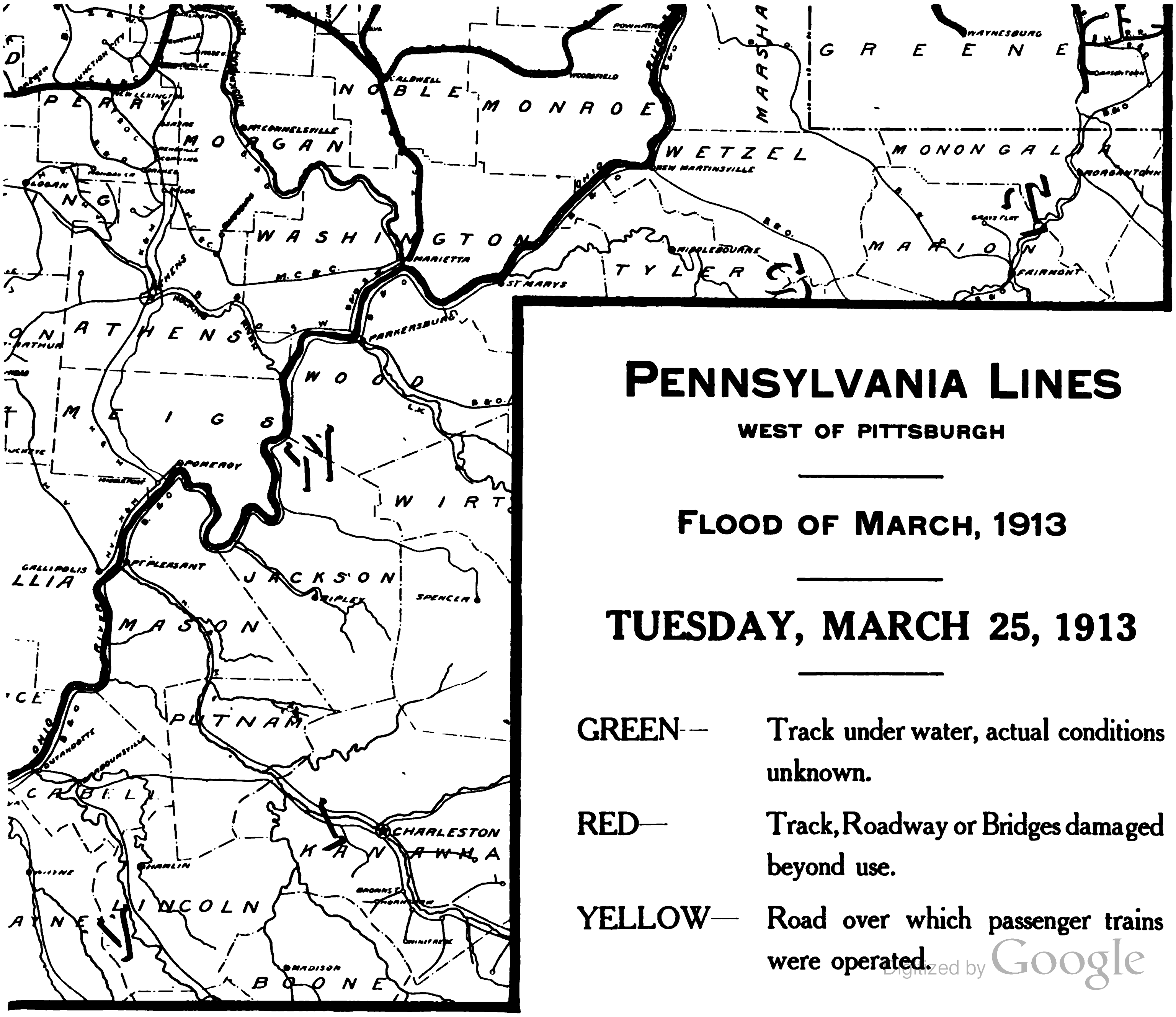
Dayton, Ohio. March 25, 1913.

Fourth and Main Streets. Depth of water indicated by lamps on curb-posts, which were nearly all swept away.



Dayton, Ohio. March 25, 1913.

Second Street, between Main and Ludlow, before crest of flood was reached.



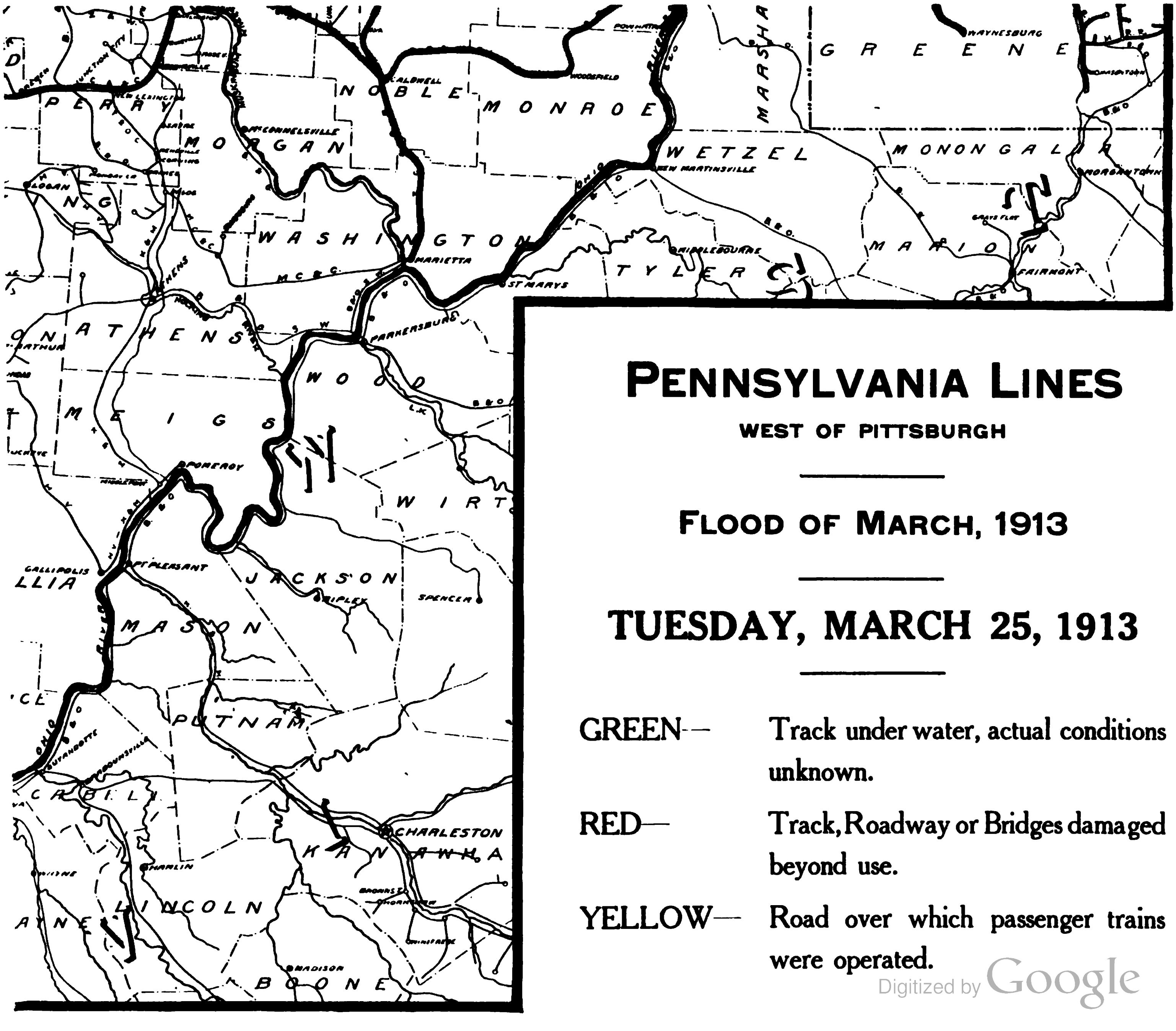
PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

TUESDAY, MARCH 25, 1913

GREEN—	Track under water, actual conditions unknown.
RED—	Track, Roadway or Bridges damaged beyond use.
YELLOW—	Road over which passenger trains were operated.



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CHAPTER 3.

WEDNESDAY, MARCH 26.

The early morning reports for the 26th indicated that during the night the crest of the flood had passed in the northern portion of the valleys draining into the Ohio, and that the water was there beginning to fall while still rising further south; but many portions of the line were under water and it was impossible either to ascertain the extent of damage or make any move toward repair until the water had gone down.

It was reported that at Dayton water was from 12 to 18 feet deep over the whole business portion of the city, that fire was burning uncontrolled in the heart of the town, and that probably 5,000 lives had been lost. From the reports received, it seemed the city was surely doomed to almost complete destruction, and while later reports indicated that the early rumors, particularly as to loss of life, were pretty wild, the situation was still such that every life was seriously threatened.

Similarly, at West Columbus the flood damage was the most serious in history. In reoccupying a long unused channel, the Scioto River had washed away scores of good homes and inundated a large residence area. It was reported that hundreds of lives had been lost, and that thousands were still in danger.

At Piqua, a considerable residence portion of the city, as well as the entire business district, was reported under water. At Zanesville and Delaware, conditions were the same. At Logansport, Ind., water was reported ten feet deep in the station (Pan-Handle), with the business portion of the city and a large residence district inundated, and probable loss of life.

Newspaper accounts of similar conditions all over Ohio and Indiana, and reports of damage to the bridges and tracks of our own lines, made it apparent that the condition of the people along all the river courses in those States was desperate. From the meager reports which could be had in the absence of telegraph and telephone facilities through most of the flooded territory, it seemed that the loss of life was heavy everywhere, and that the whole population was in imminent peril.

The management therefore instructed that the Governors of Ohio and Indiana should be notified of the conditions as to railroad facilities and that an official tender should be made them of such facilities as the Pennsylvania Lines had left, for the relief of the flood sufferers. Instructions were also given to suggest to the Governor of Ohio that the first need would probably be for boats to take the people from the buildings and houses in which they had been marooned, and that these could probably best be obtained from the lake port cities of Cleveland, Sandusky and Toledo.

Steps were immediately taken, also, to obtain lists of all provisions and foodstuffs enroute on the various lines of the Pennsylvania System, and the State authorities were advised that this information would be available if needed. Several trains of dressed beef were located at points in or near the flooded district, but the State officials advised that food for immediate consumption, such as canned goods, was what was needed most.

In various towns and cities outside the region of flood damage, subscriptions for relief funds and supplies were started, and the municipal authorities were advised at once that all relief supplies would be transported free of cost. This announcement was later made public, and in all 91 cars of relief supplies were moved free, in addition to such l. c. l. packages as were offered. Similar arrangements were also made by the express companies operating in Ohio and Indiana.

According to the reports received, it was known on Wednesday morning that the railroad had been put out of service by damage at the following points:

Eastern Division:

Lucas to Perrysville, practically all bridges destroyed or approaches washed out.

Wooster Hill, ballast washed from under tracks.

Mansfield, water over tracks and in passenger station; culverts west to Toledo Junction, unsafe.

M. & C. Junction, ballast washed from under tracks.

Water over tracks at a number of places.

Western Division:

Bridge 182 east of Delphos, and Bridge 183 near Middlepoint, approaches washed out.

Upper Sandusky and Nevada, tracks much washed.

C. & P. Division:

Water very high but service not interrupted except between Mineral City and Zoar.

E. & A. Division:

Water over "low grade" line from Kenwood to Wampum Junction.

Mahoningtown yard and shops under water from two to four feet.

Through Youngstown district, from Struthers to Niles, tracks under water, in some places as deep as ten feet. Amount of damage unknown.

Warren, about 12 feet of water over tracks east of station.

New Castle district, and north to Sharon, tracks under water from two to six feet. Amount of damage unknown.

Water still rising at most points.

Toledo Division.

Sandusky Branch, water over tracks at Delaware 12 to 15 feet, loaded cars on bridge completely submerged; freight house also entirely under water.

Akron Division:

Washouts at Barberton, Warwick, Orrville and Mount Vernon; water very high at intermediate points.

Dresden Branch, under water.

Marietta Division:

Walhonding Branch, under water, seriously damaged, extent unknown.

High water all along main line of Division, with more or less damage.

Pittsburgh Division:

Water over tracks for almost entire distance from Tuscarawas to Black Run, 51 miles; Bridges 100 and 101 washed out, and tracks badly damaged at numerous points.

New Cumberland, Hickory, Burgettstown and Wheeling Branches, out of service on account of high water and landslides.

Cincinnati Division:

West Columbus, track badly damaged, exact extent unknown.

Dayton, Water 15 to 18 feet over tracks and in station; west spans of bridge over river washed away.

Water high in Little Miami valley, but conditions unknown.

Indianapolis Division:

Columbus to Marble Cliff, water over tracks and fill badly washed between the two rivers.

Piqua, approaches to bridge over Miami River washed out.

New Paris, west of, two bridges washed out.

Logansport Division:

Logansport, water over tracks from two to fifteen feet, and in passenger station ten feet deep; water over tracks west to Kenneth.

Richmond Division:

Number of bridges out between Camden and Hamilton, but exact conditions unknown.

Louisville Division:

Track and bridges badly damaged in several places north of Columbus Ind., and between Columbus and Jeffersonville.

Indianapolis Terminal Division:

Belt Railway badly damaged; four tracks washed out for half a mile, four engines undermined and lost in water.

Vandalia R. R.:

Vincennes Division: Under water in Valley of White River, extent of damage unknown, old line bridge at Indianapolis lost.

St. Louis Division: Washed out at Belt Crossing, Indianapolis, and under water at Macksville; old line bridge at Indianapolis lost.

Michigan Division: Track under water just south of Logansport at crossing of Wabash River.

G. R. & I. Ry.:

Washout at crossing of St. Mary's River north of Decatur, and water up to track at several other points.

In addition to these serious breaks, innumerable minor washouts, landslides, etc., had occurred over the entire system, many of which the local forces were able to repair without great delay.

During the course of the day, reports came in from all directions as wires were restored to service here and there, and each message received added knowledge of damage sustained at some new point or confirmed rumors of enormous damage throughout Ohio and Indiana.

In an effort to move such trains as were marooned, and to facilitate the movement of repair gangs and material, relief supplies, etc., to the points where they were most needed, a systematic plan of exchanging information with all railroads in the affected territory, as to just what roads or portions of road were open for traffic, was inaugurated in the afternoon. A message was sent to each connecting railroad giving the state of affairs on the Pennsylvania Lines, and asking for similar information for the other lines, and arranging for such an exchange of information twice every day. As giving the situation in a nut-shell, a copy of the first circular message sent connecting lines follows:

> "Will you be kind enough to advise me every twelve hours of conditions on your line, by wire, and I will do the same? This for the purpose of finding out the possibilities as to detour service. Our lines on the Pan Handle are open from Pittsburgh to Coshocton and from Chicago to Logansport. The Fort Wayne road is open from Pittsburgh to Wooster, Ohio, and from Chicago to Delphos, Ohio. Cross lines badly cut up. Will take three to six days to open Fort Wayne road and one to two weeks to open Pan Handle. Kindly give me similar information as to prospect of opening your line and points between which it is now open. We want especially to get a line from the lake front at Cleveland, Toledo, or any intermediate point, to any point on the Fort Wayne road or the Pan Handle for the purpose of getting repair material and pile drivers to the flooded district. Please answer."

Responses to this message indicated that most other roads had been equally damaged by the flood, and until the following day no additional detour routes were found.

The Northwest System was open for service only to Cleveland, via Alliance, and all through trains between Pittsburgh and Chicago were run via Cleveland and the Lake Shore road. The Southwest System was closed throughout except for local or "make-up" trains over short sections of line where the damage was slight. The through trains were all annulled, and passengers for Chicago and St. Louis were sent on Ft. Wayne route trains to Chicago. The Central System was closed, except for local service between Cleveland and Barberton, Columbus and Mt. Vernon, Sandusky and Delaware, and Toledo and Toledo Jct. The Vandalia Railroad ran no through trains, but was able to provide local service over most of the line, except the Vincennes Division. The G. R. & I. was closed between Ridgeville and Adams, but ran local service over the rest of the line.

There was not a through route open between any of the terminals of the Pennsylvania Lines West, with the one exception of the line from Pittsburgh to Cleveland, and over this, and the Lake Shore road, partial service for Chicago and the west was maintained, subject to a delay of from four to eight hours.

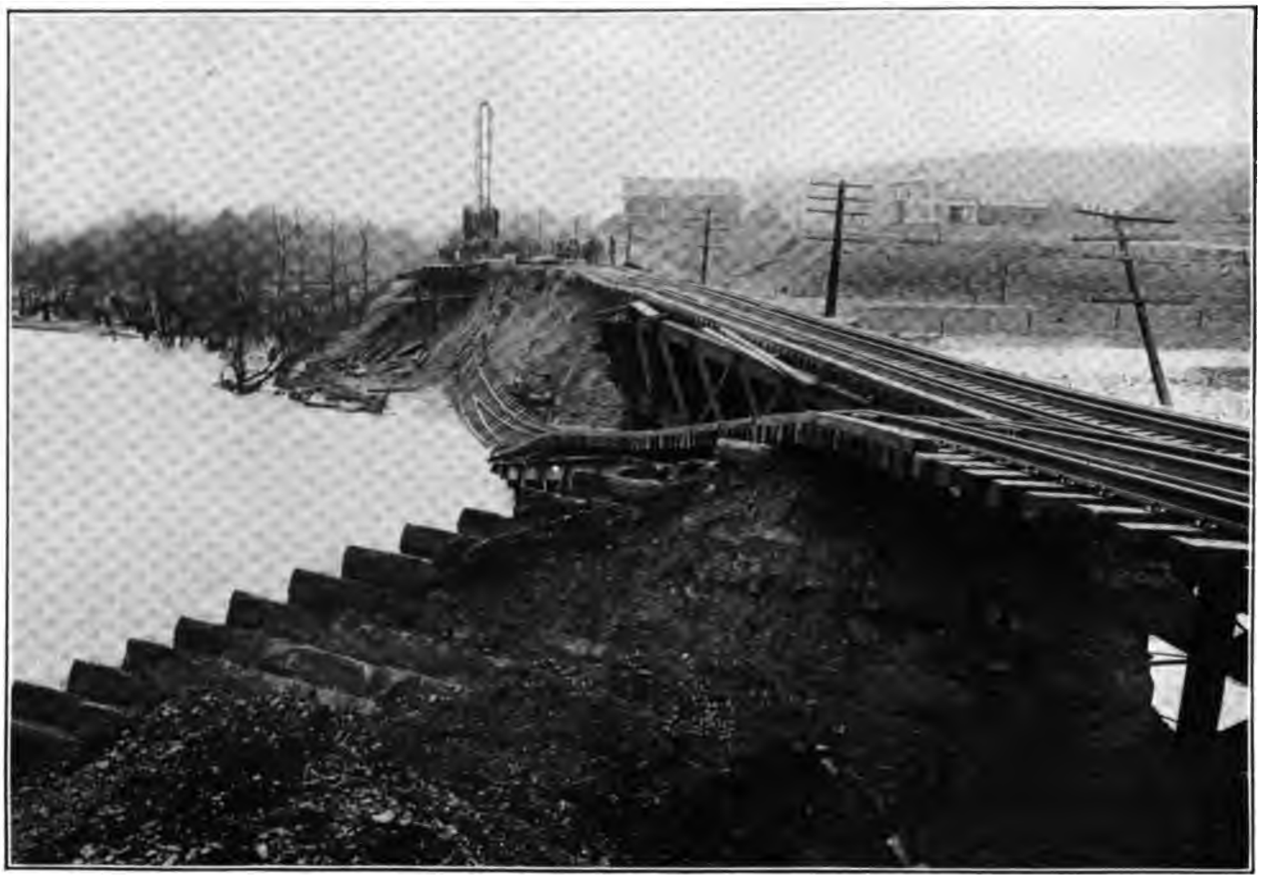
Most of the other railroads through the same territory were similarly crippled, so that of the network of railways covering Ohio and Indiana there was left so little that no through routes could be patched together anywhere.

The purchase of repair material—bridge timbers, piling, filling material, tools and equipment—was pushed at the several principal market points, and all available material was loaded on cars and made ready for shipping directions.

The Pennsylvania Railroad officers were informed that our greatest need would probably be for bridge timbers, bridge carpenters, piling and pile drivers, with commissary equipment to enable the crews to live where the work was to be done. They assembled such material, men and equipment as it seemed could be used, and started them west for distribution. The Cumberland Valley Railway also sent a gang of bridge carpenters, with equipment, etc. The Long Island R. R. proffered the services of a pile driver and crew, which offer, however, was not accepted until it was actually known that it would be needed, the following day.

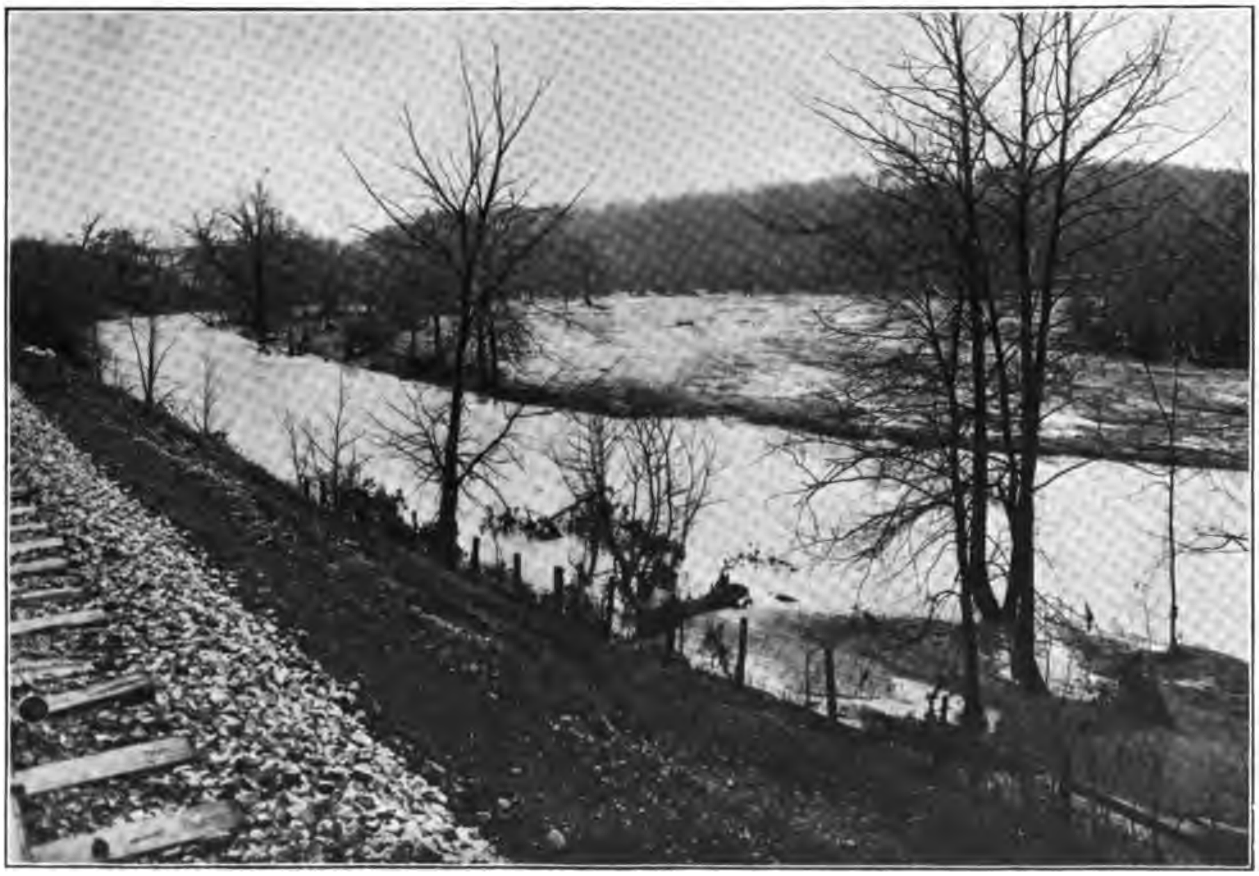
It continued to rain all day, and as it got colder in the evening, the rain turned to a heavy damp snow over the western and northern parts of the territory. At the headwaters of the principal streams, the water was stationary or was falling slightly. but in the main river courses the water continued to rise, although all previous records had been far exceeded at most points hours before. The Weather Bureau predicted a continuation of the downpour, and their prediction was verified. While it continued to rain, and rain hard, however, there was fortunatly not a repetition of the exceedingly heavy fall of Sunday night and Monday morning.

Photographs of the situation on the 26th were, as on the previous day, hazy and indistinct on account of being taken in the rain, and comparatively few were made on account of the weather conditions.



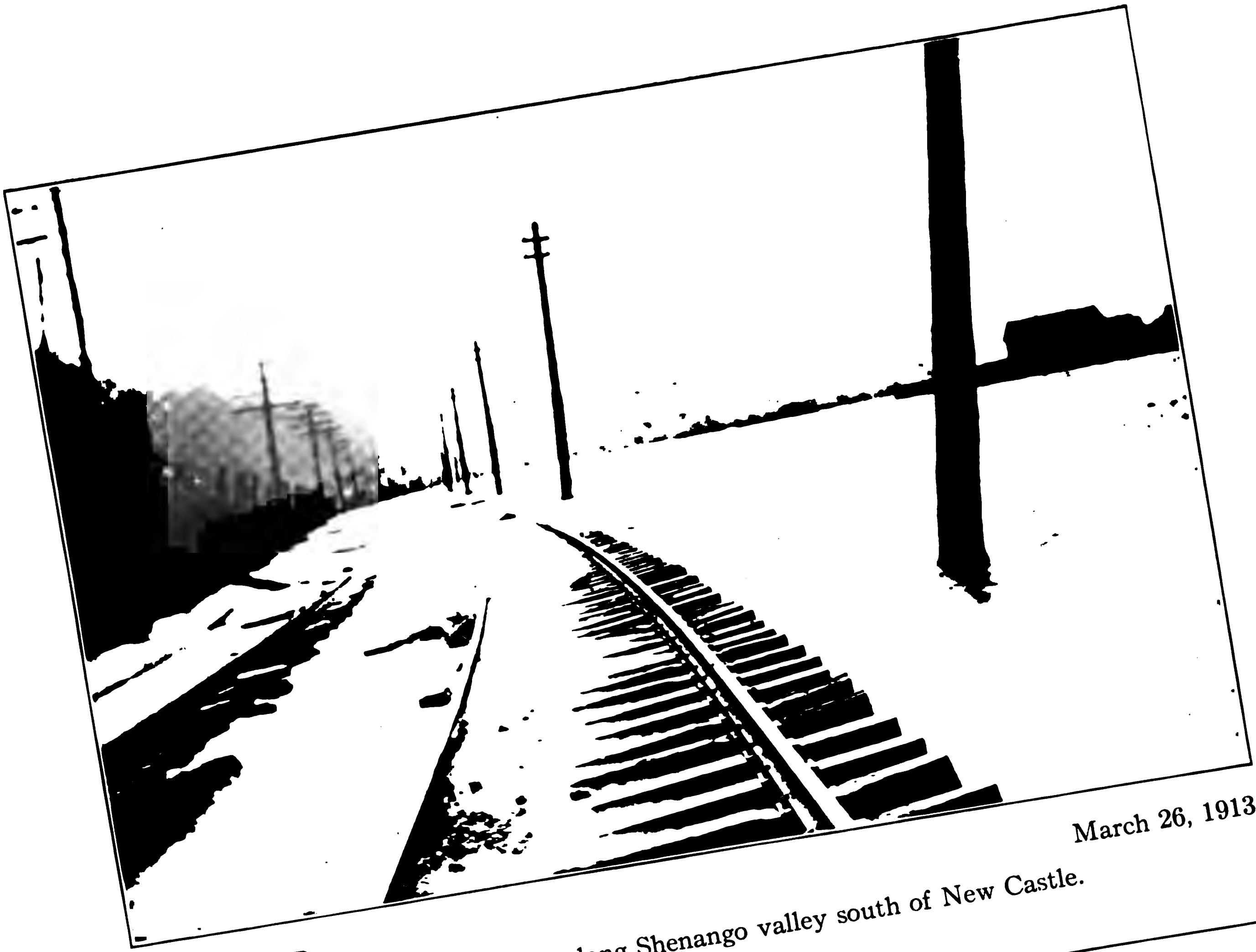
Lucas, Ohio, east of. March 26, 1913.

Bridge No. 146, looking west, over Rocky Fork. Both abutments and 125 feet of approach embankment destroyed.



Lucas, Ohio, east of. March 26, 1913.

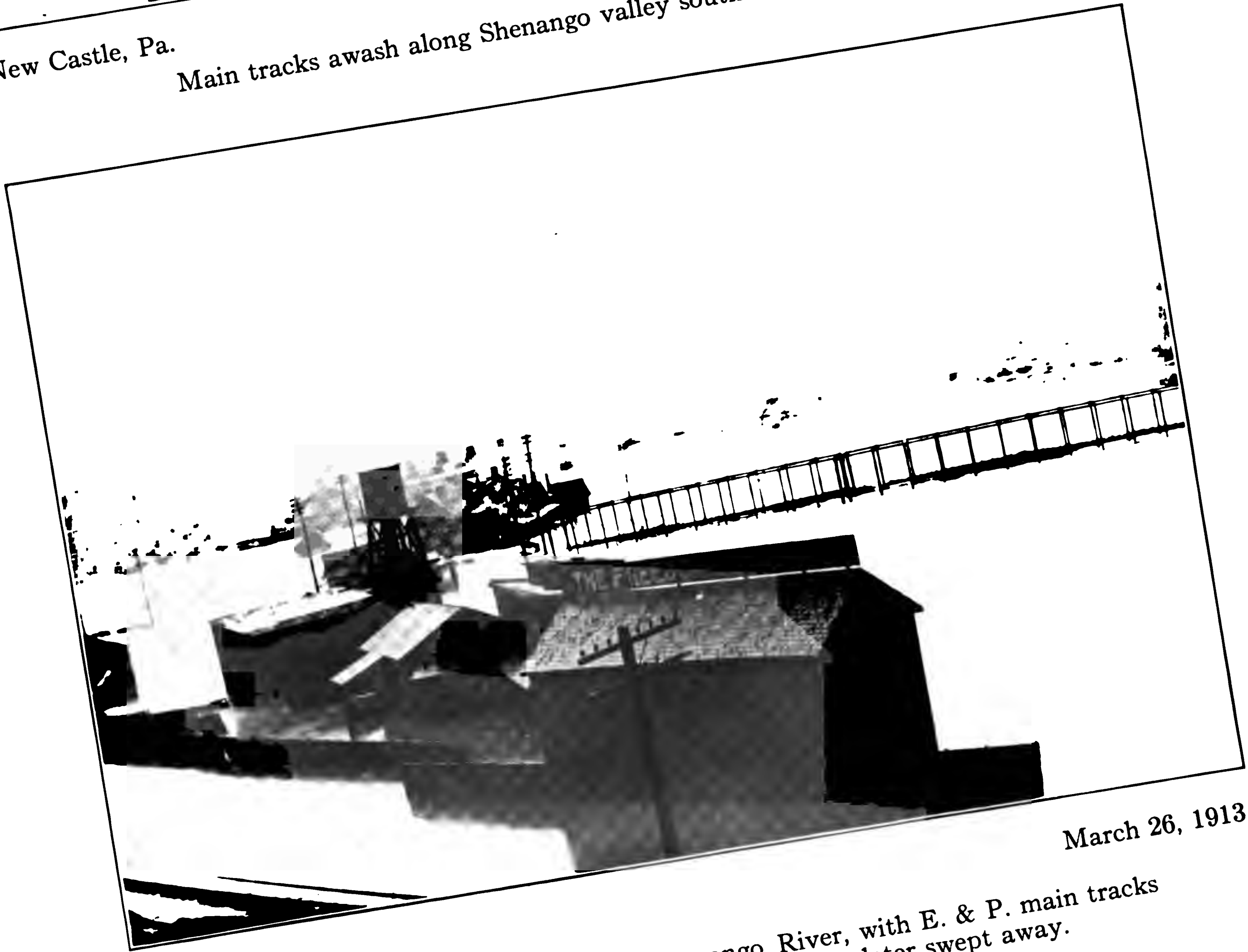
Showing Rocky Fork back in its channel but entire valley still awash.



March 26, 1913.

New Castle, Pa.

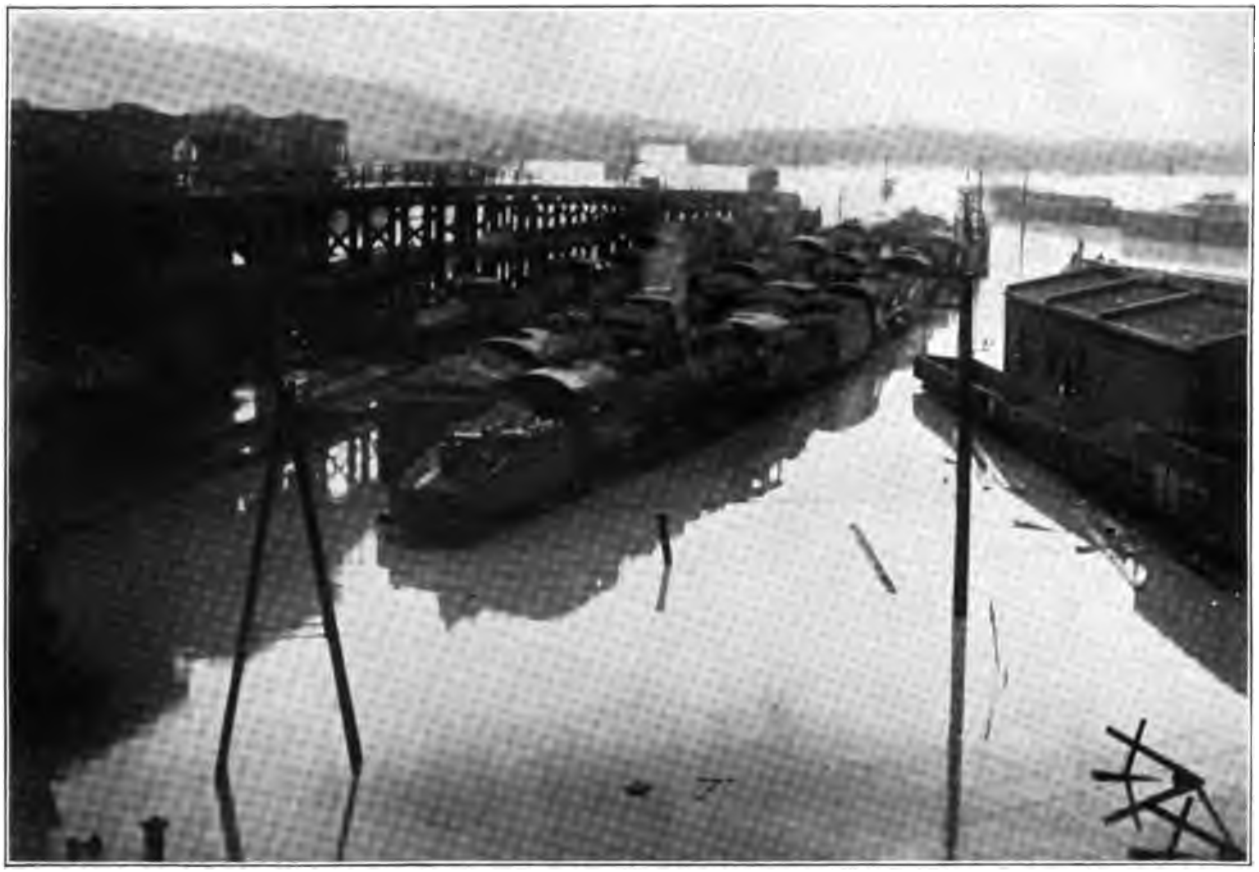
Main tracks awash along Shenango valley south of New Castle.



March 26, 1913.

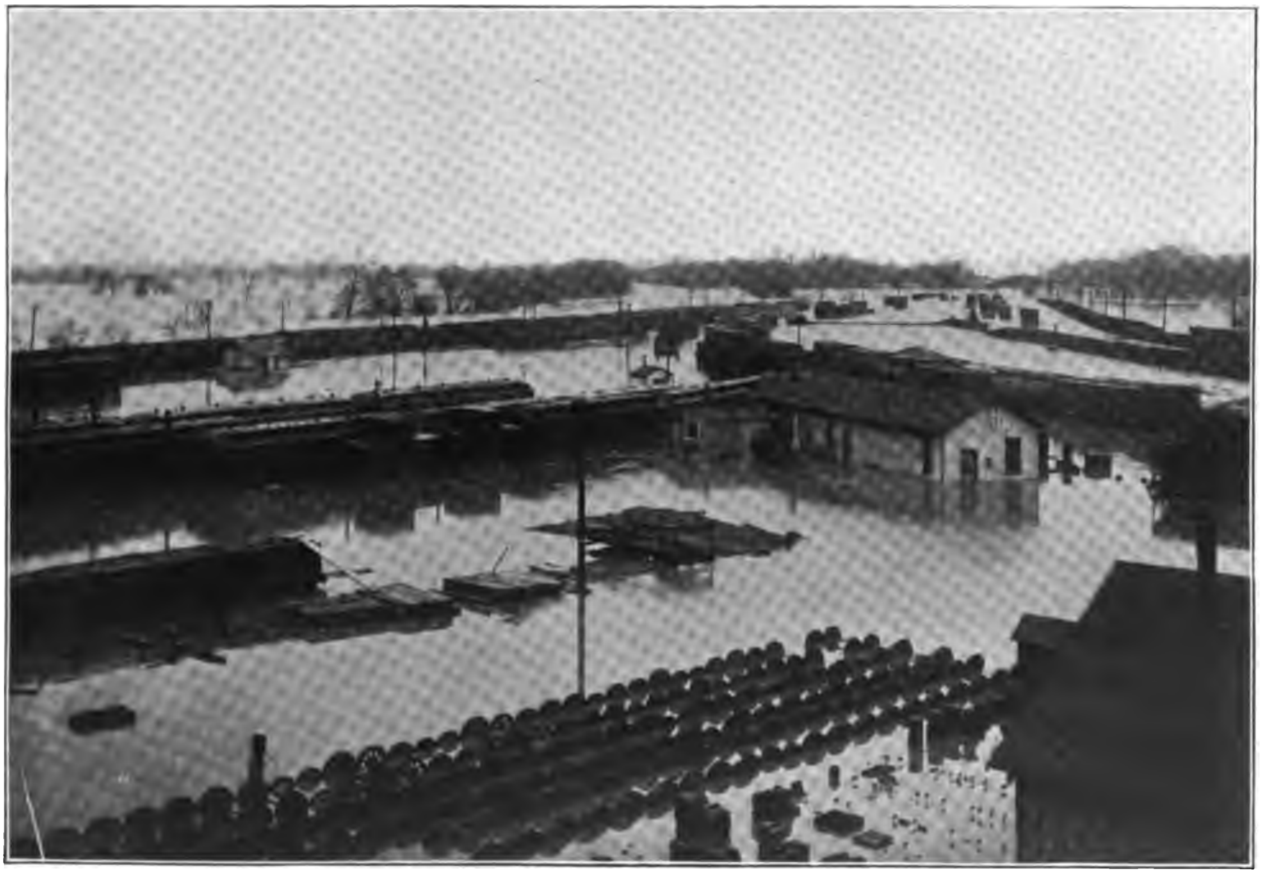
New Castle, Pa.

Grant Street Wagon Bridge, over Shenango River, with E. & P. main tracks in foreground at left. Grant Street Bridge later swept away.



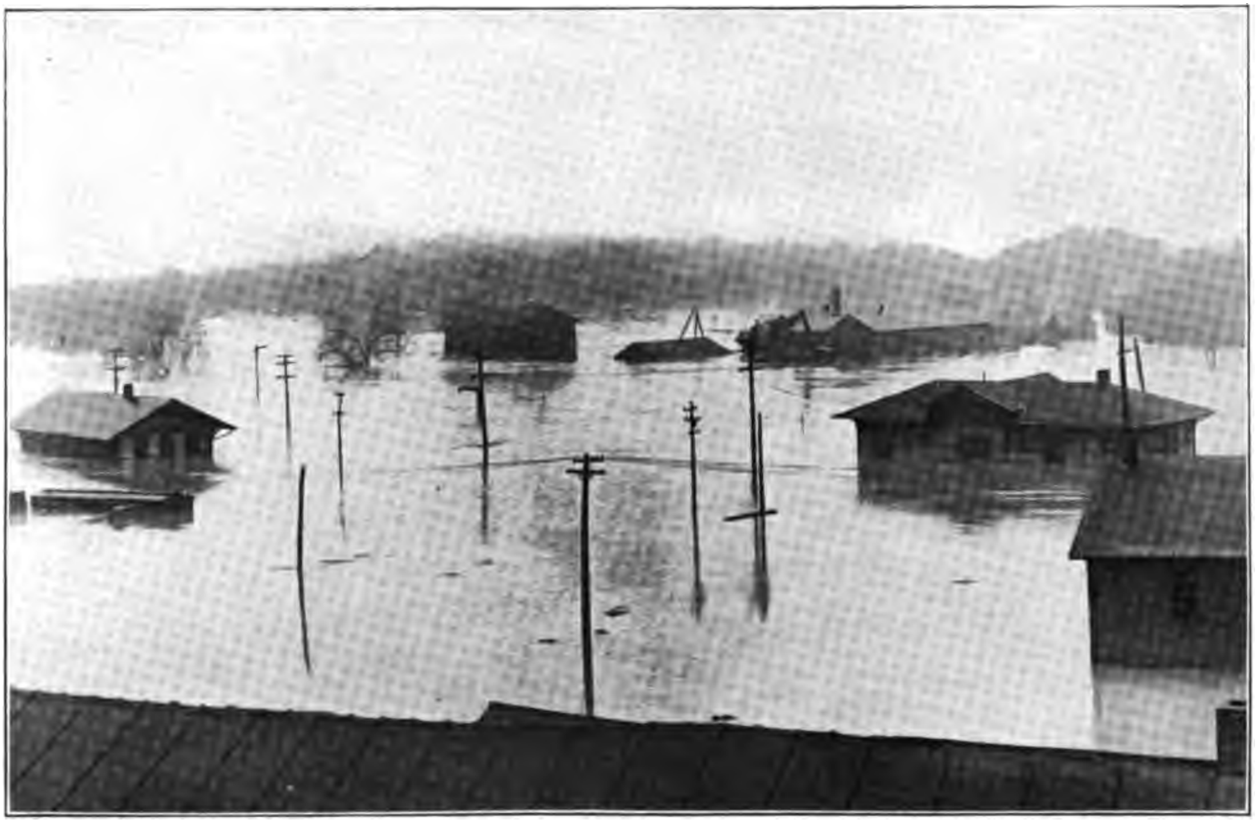
Mahoningtown, Pa. March 26, 1913.

Coaling trestle and outbound engine tracks at enginehouse. View from roof of enginehouse, looking west.



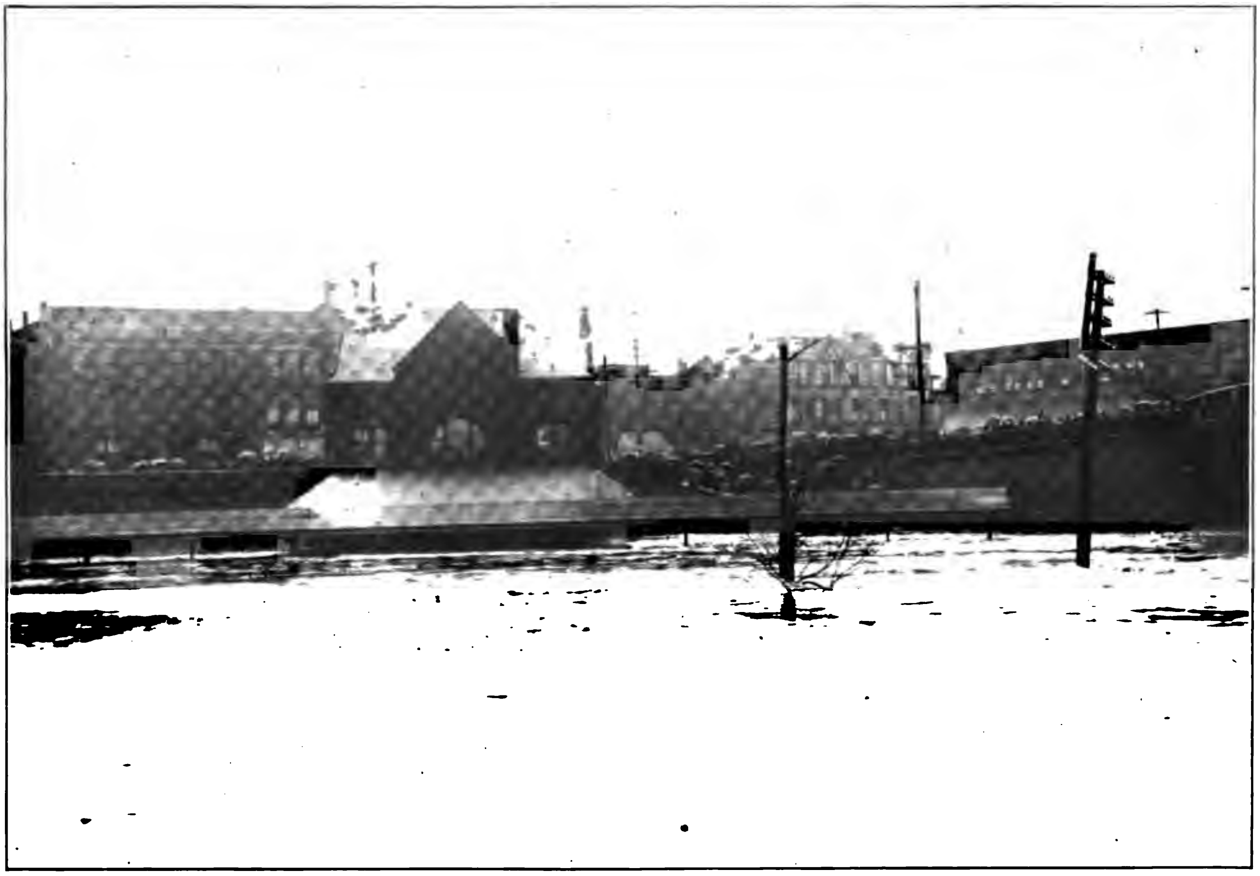
Mahoningtown, Pa. March 26, 1913.

Looking east from roof of enginehouse.



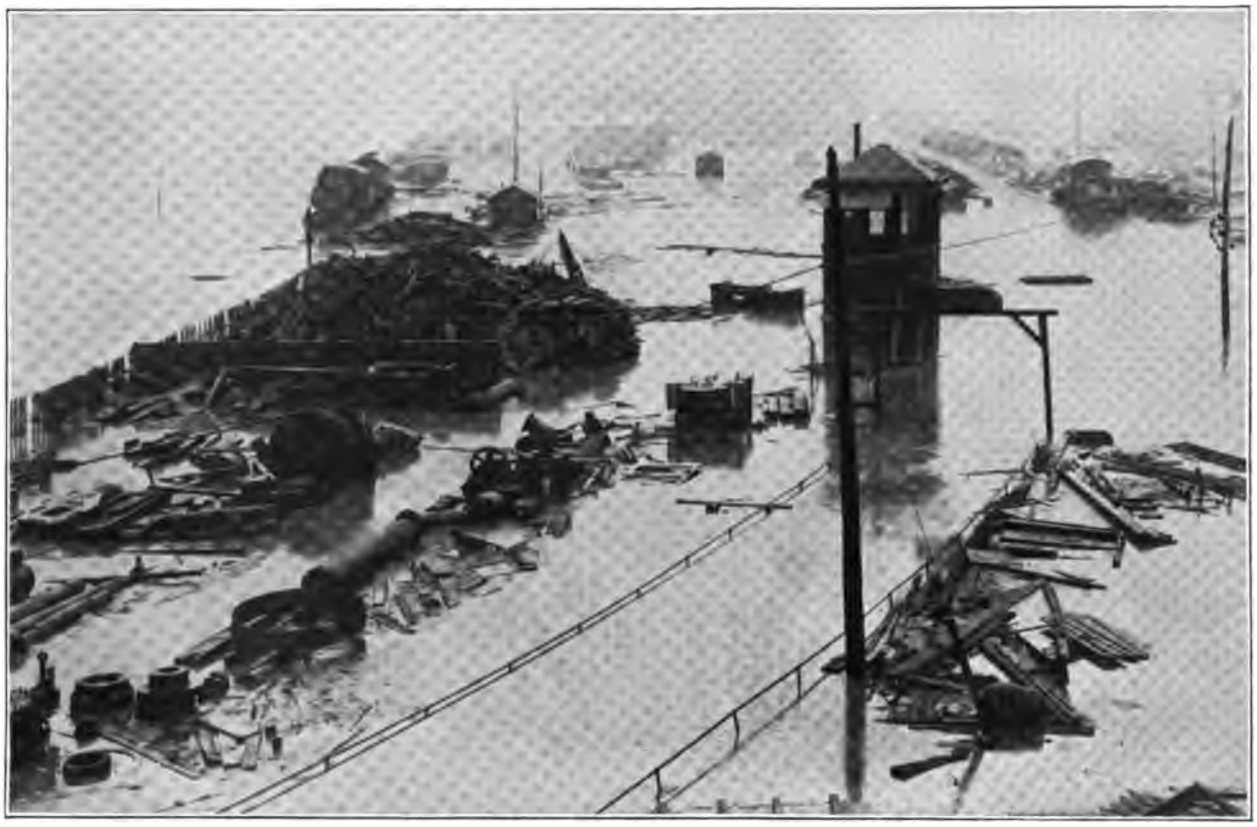
Niles, Ohio. March 26, 1913.

Pennsylvania Lines Passenger and Freight Stations, at right and left respectively.



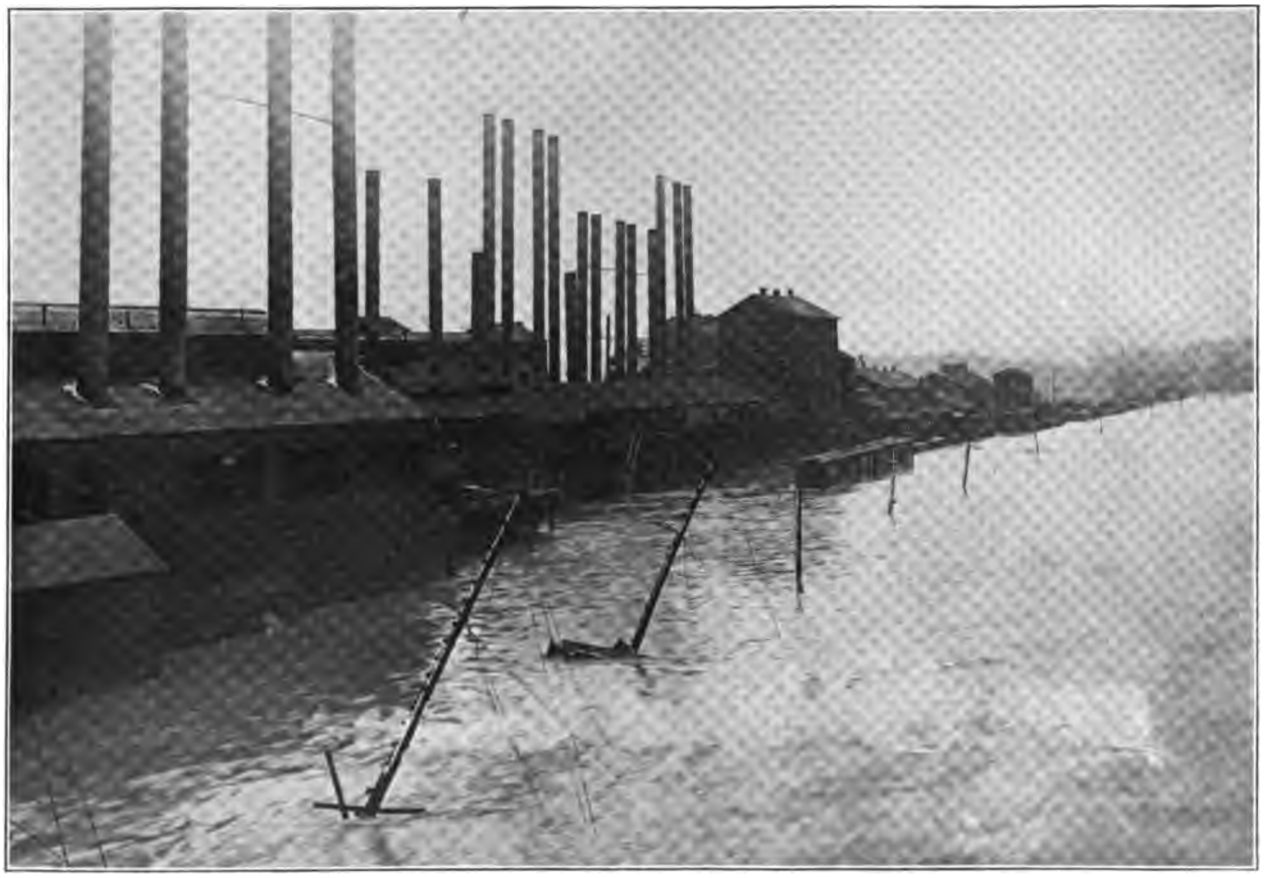
Youngstown, Ohio. March 26, 1913.

Passenger Station of Pennsylvania Lines from Spring Common Bridge.



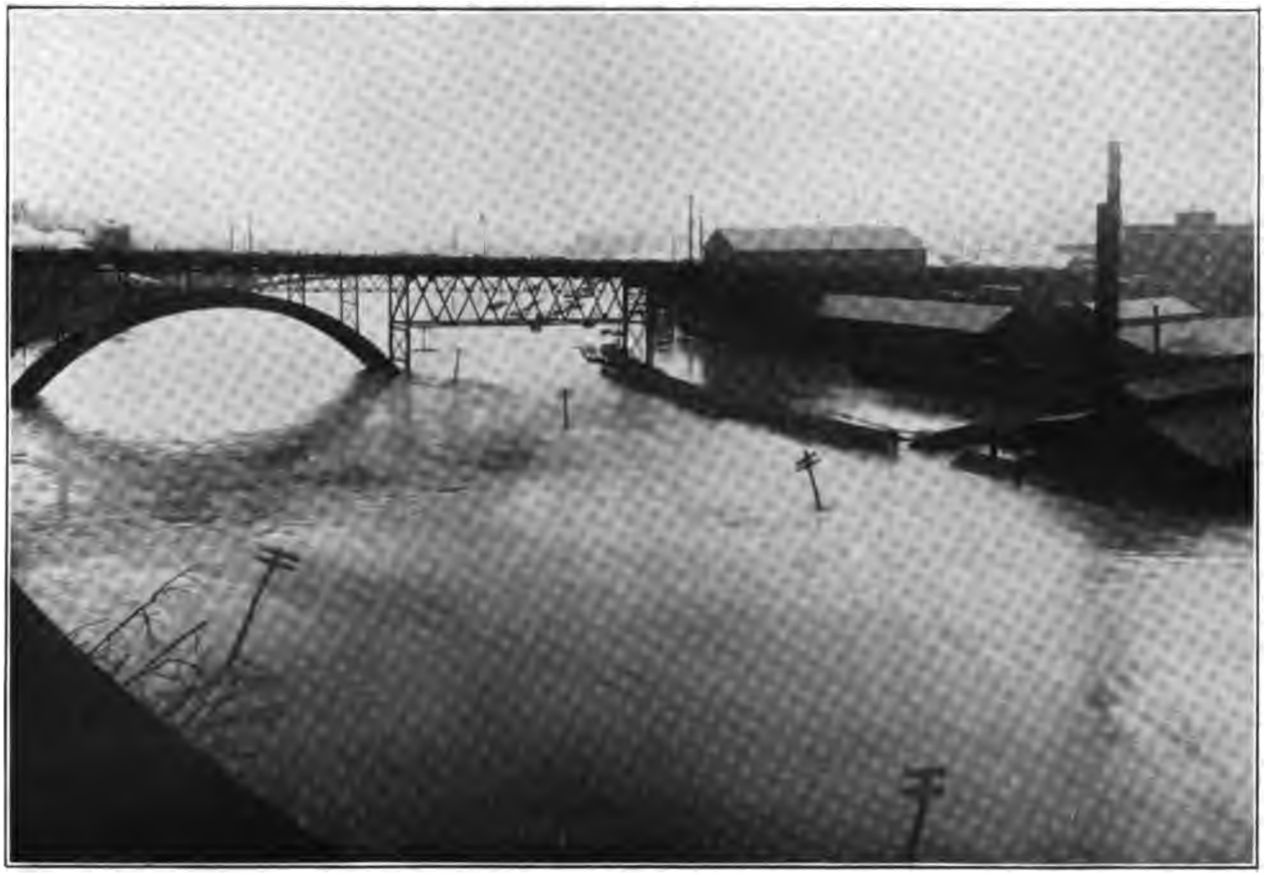
Youngstown, Ohio. March 26, 1913.

Crab Creek. Pennsylvania Lines engines and tracks to left of fence at left of picture.

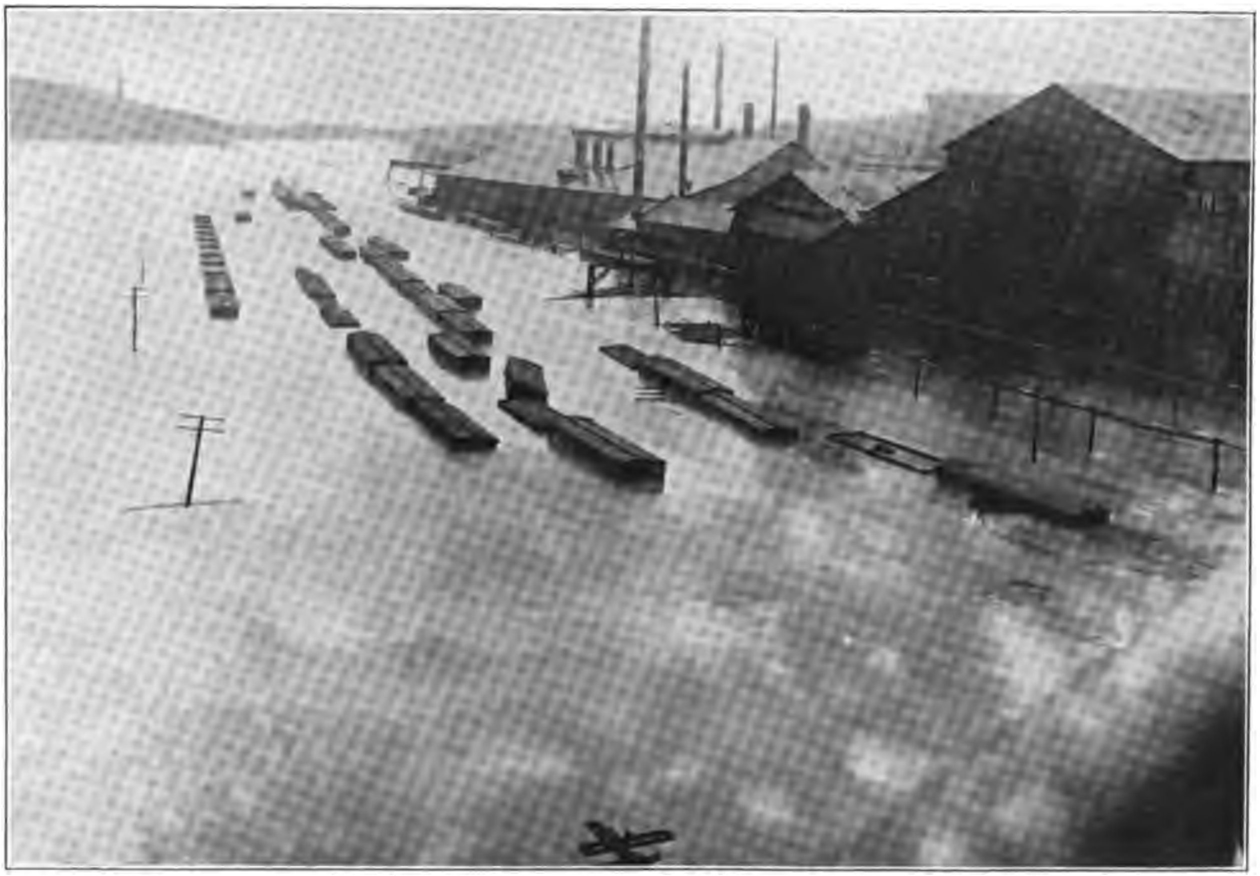


Youngstown, Ohio. March 26 or 27, 1913.

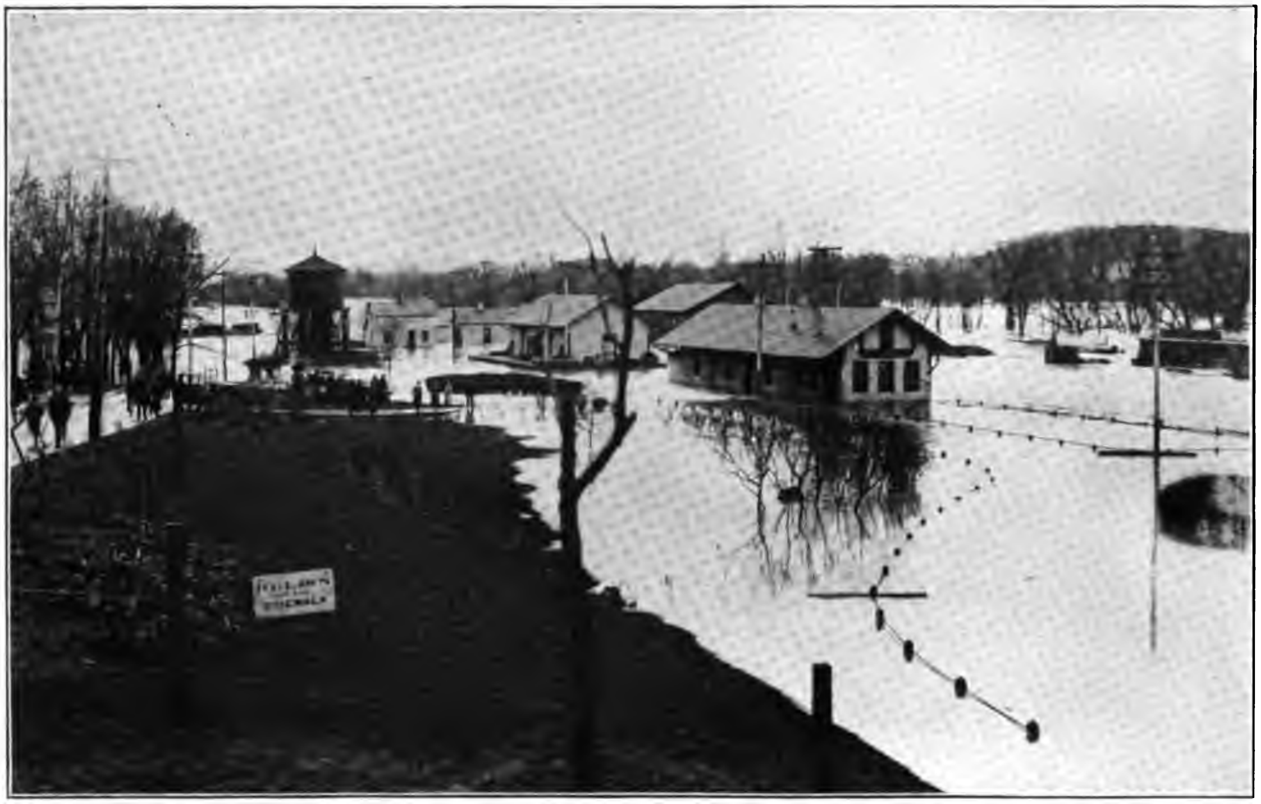
Pennsylvania Lines tracks along Brown-Bonnell plant of Republic Iron & Steel Co., under water; remains of telegraph line in foreground.



Youngstown, Ohio. March 26 or 27, 1913.
Market Street Viaduct, over Mahoning River, showing Main and Market Street Yards under water.

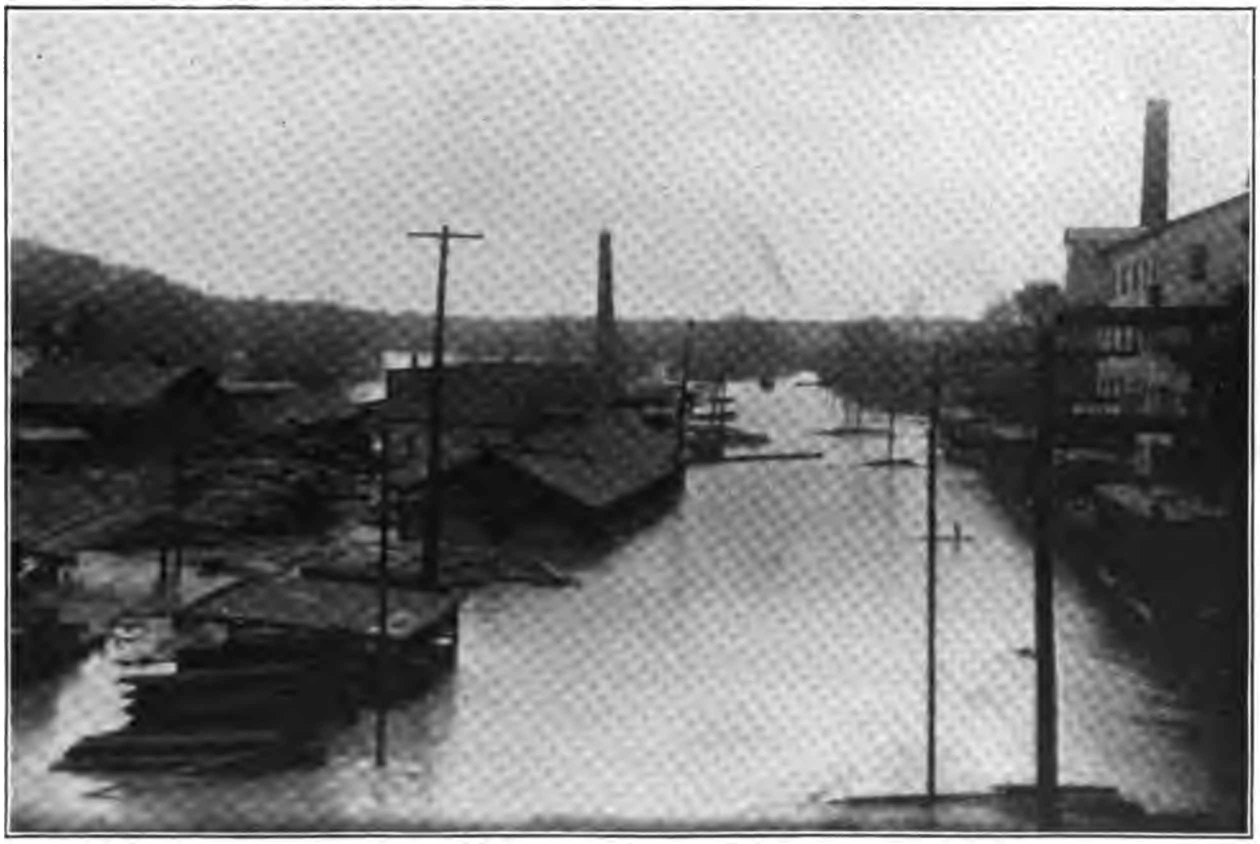


Youngstown, Ohio. March 26 or 27, 1913.
Market Street Yard. William Tod Company plant in background. Taken from Market Street Viaduct over Mahoning River.



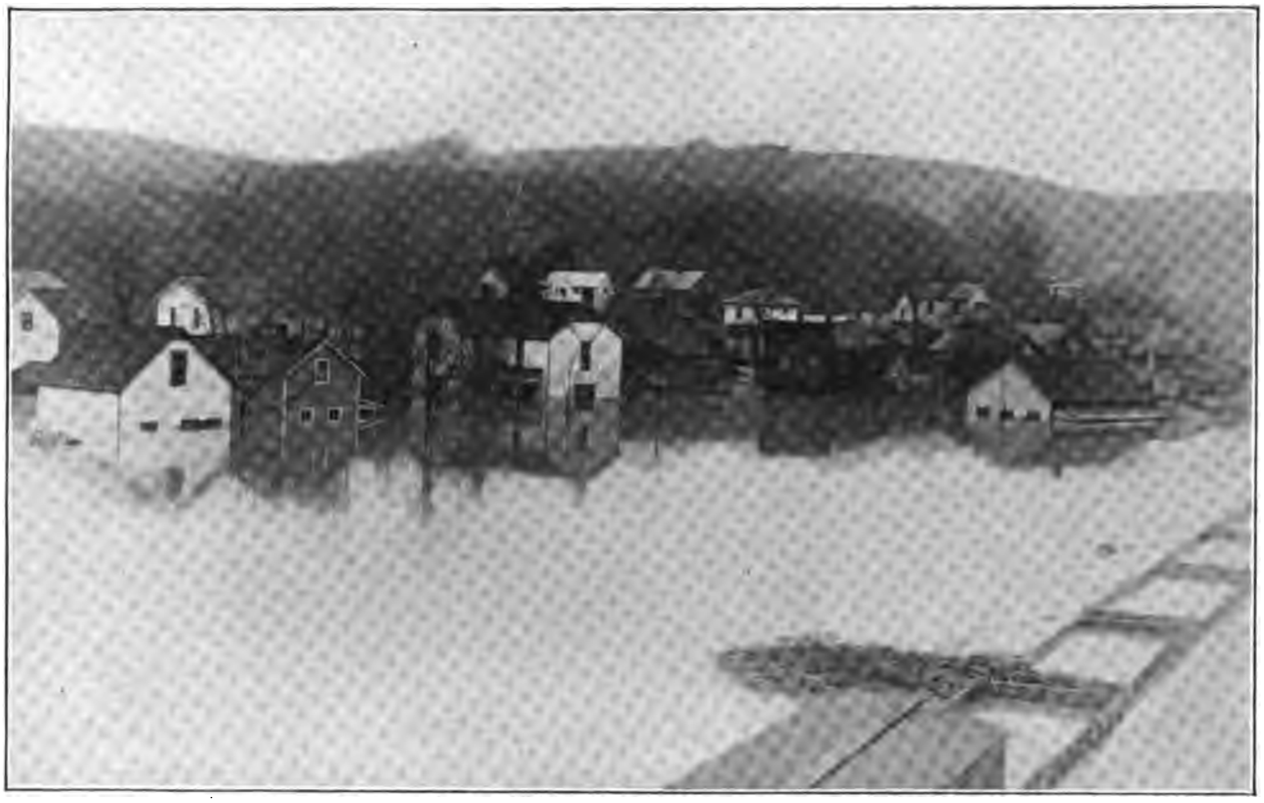
Millersburg, Ohio. March 26, 1913.

Pennsylvania Lines Station and grounds, with two feet of water in Station.



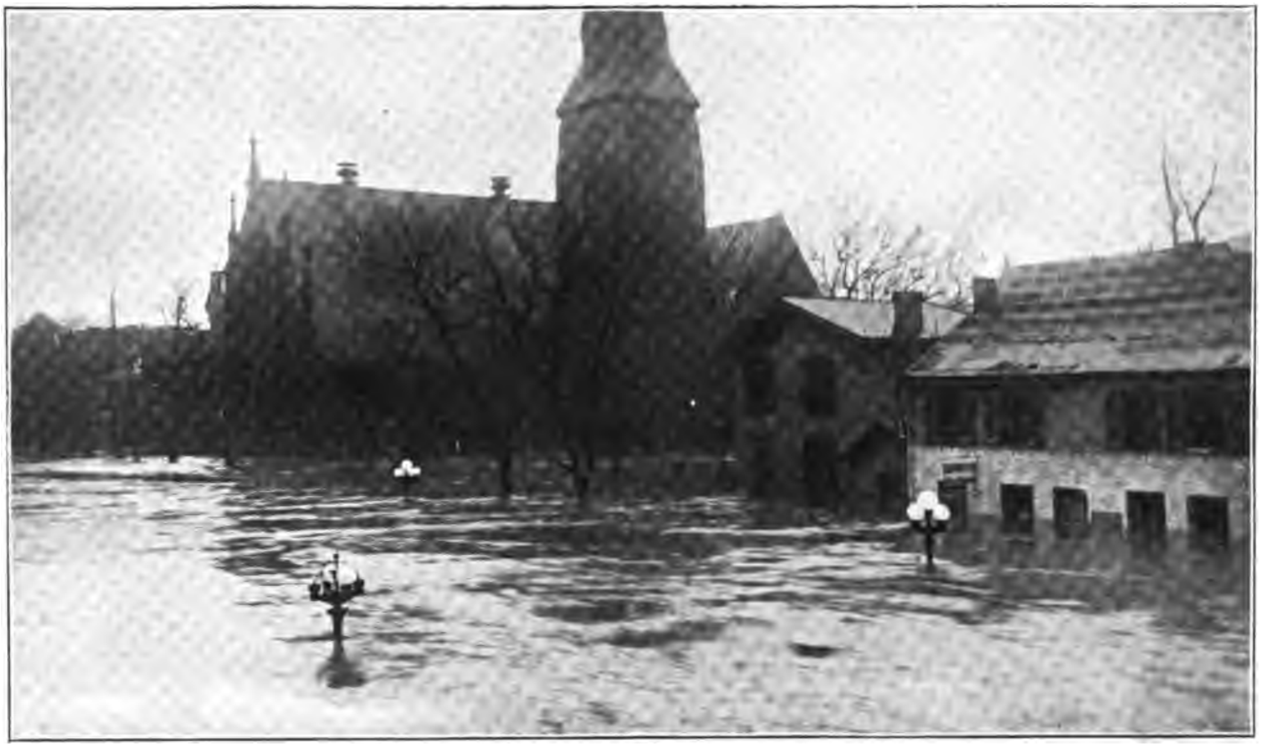
Millersburg, Ohio. March 26, 1913.

Looking north from Main Street along main tracks of Akron Division.



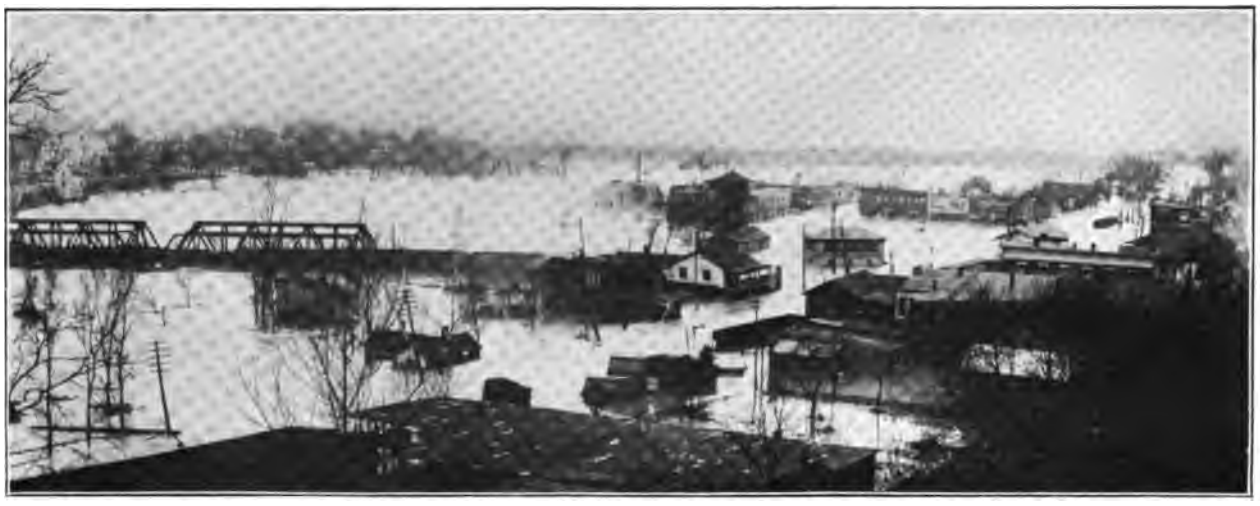
Brink Haven, Ohio. March 26, 1913.

Looking over village and Akron Division track from Marietta Division overhead bridge.



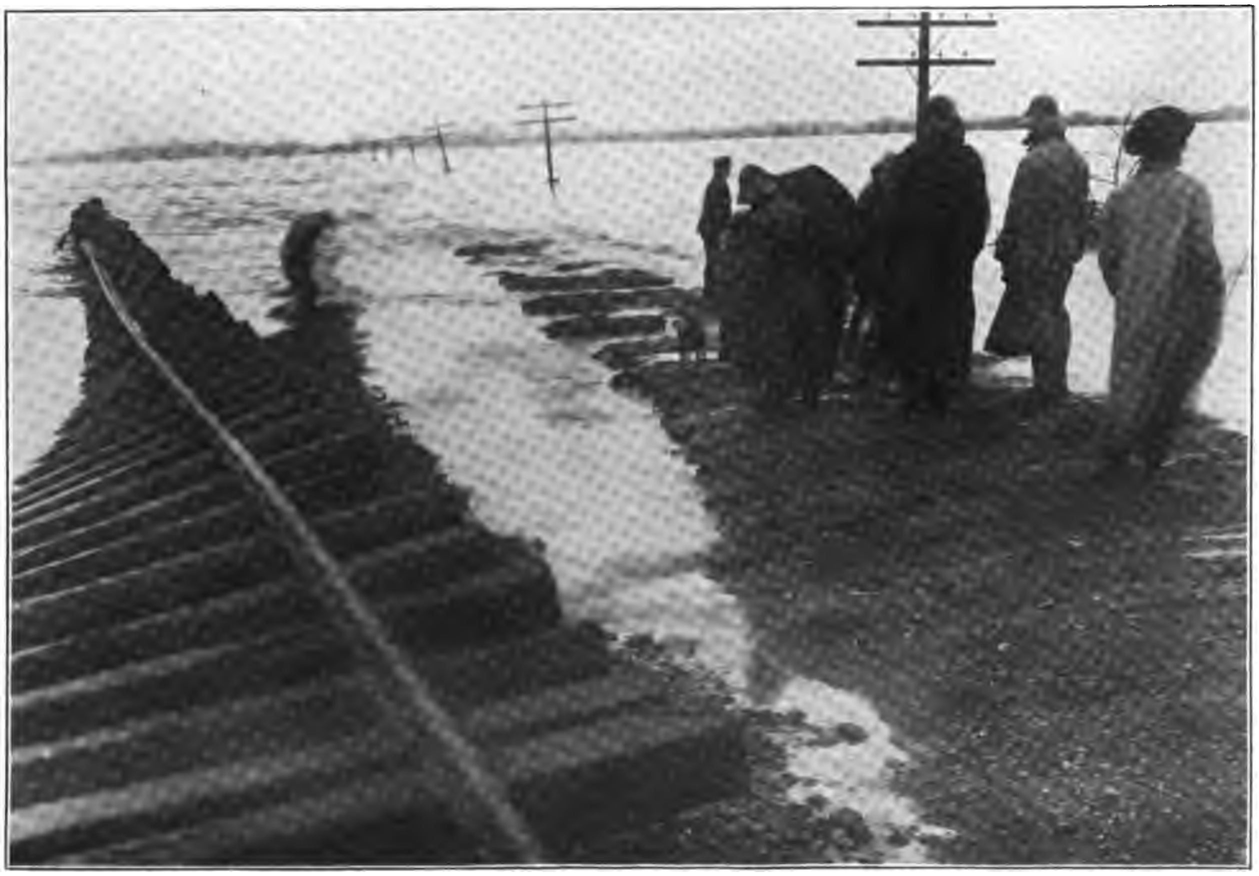
Dayton, Ohio. March 26, 1913.

Second Street and Ludlow—water receding, note globes broken by debris on lamp post in foreground.



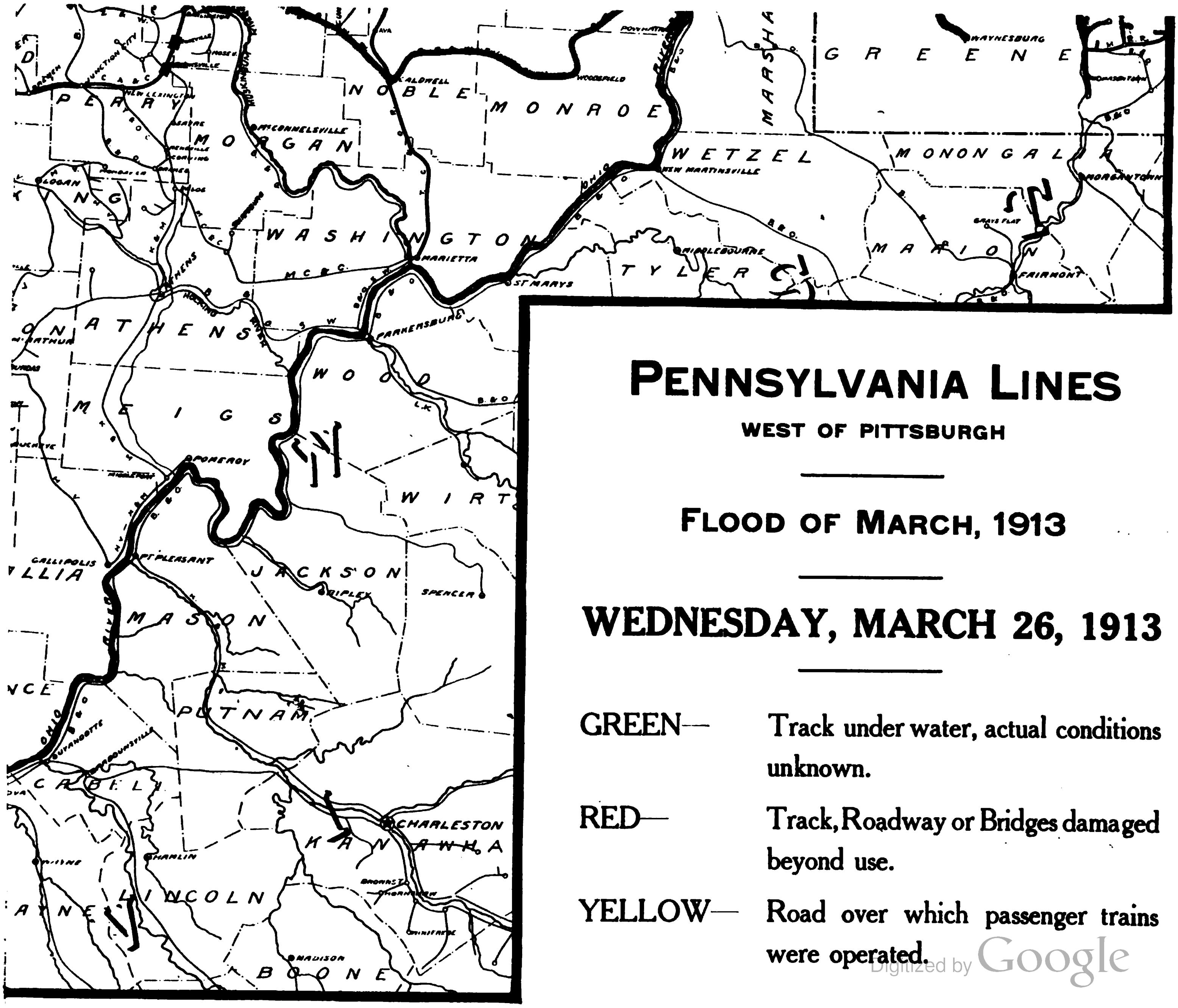
Loveland, Ohio. March 26, 1913.

Pennsylvania Lines tracks under water, B. & O. S. W. bridge weighted down.
Interlocking tower at crossing about one-half story under water.



Circleville, Ohio. March 26, 1913.

Looking west over approach to Bridge No. 96, over Scioto River.



PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

WEDNESDAY, MARCH 26, 1913

GREEN—	Track under water, actual conditions unknown.
RED—	Track, Roadway or Bridges damaged beyond use.
YELLOW—	Road over which passenger trains were operated.

CHAPTER 4.

THURSDAY, MARCH 27, 1913.

The third day of the flood was still one of uncertainty as to how great the damage and loss of life would be. Snow had succeeded the rain over a large part of the territory during the night, giving the streams a chance to fall somewhat, but most of them were still higher than they had ever been before. The water had retarded the restoration of telegraph and telephone facilities, so that exact conditions were still unknown for large portions of the line; but reports of the situation at hundreds of places showed that the damage had exceeded that of any other flood in the history of the railway, or of the north central States.

As fast as the stage of water permitted, the local forces made temporary repairs to the damaged roadway and bridges which could be reached. In this way the Ft. Wayne route was opened from Chicago to Mansfield, with single track over the breaks. But there was still a gap of seventy miles (between Mansfield and Massillon) in that route between Chicago and Pittsburgh, in which extensive repair work would be necessary. A gap fifty miles long existed in the Pan Handle route, from Uhrichsville to Frazeysburg; and all the other main lines of road were broken, some of them practically destroyed for great distances. So extensive and universal was the damage, that it may be better understood by glancing at the map for the 27th than by reading a list of the points where the damage was reported. In general, it may be said that wherever the Pennsylvania Lines crossed or paralleled streams of any consequence whatever, the tracks were either under water or damaged beyond possibility of immediate use.

Knowing that the local forces were doing all in their power to repair such breaks as they could reach, the attention of the management was centered on two principal objects,—the assembling of men, tools and material for the larger repair jobs, and the rescue and relief of those still in danger or in need of food, clothing and shelter. As the latter purpose could best be served by opening up routes for relief trains, and for passenger and freight service to and from the flooded district, the knowledge of what portions of other railroads were open became of paramount importance, and every effort was bent toward finding means of getting this information.

Every message that came from western Ohio contained the information that some one or another of the large reservoirs or dams had broken or predicted that it was about to break, and there was a feeling of tense uncertainty as to what the next report would bring. Long afterwards it developed that none of the reservoirs or dams had broken, and that the unusually high water was due alone to the heavy rainfall, but the suspense was none the less acute at the time. It was also found later that had all the dams and reservoirs burst, it could have made but little difference either in the height of the water or the period of inundation, but at every new rumor, people took to the hills.

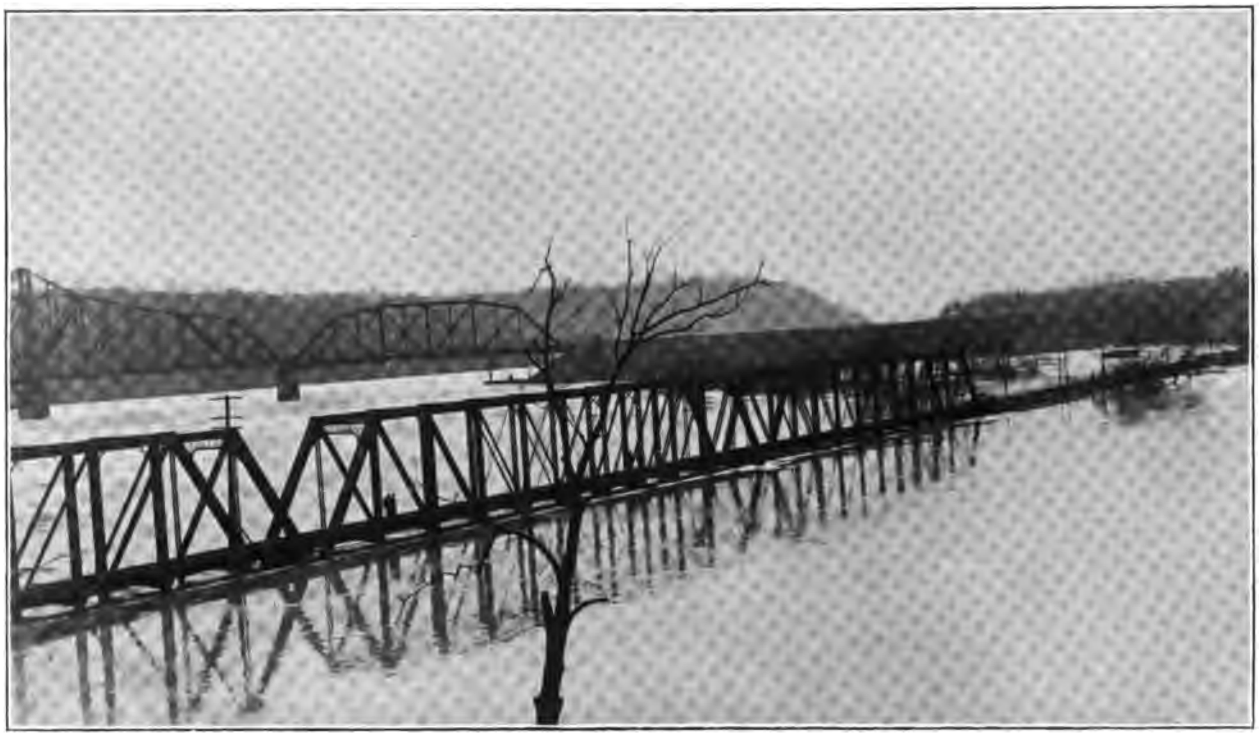
Relief supplies were offered for movement at many points, by car and train load. Most of them were forwarded in the direction of the flood zone, and gotten as near as possible, pending the opening of railway routes, but on the 27th it was impossible to get supplies to any of the towns which had been the greatest sufferers, except that during the day, it *was* managed to get one carload of provisions to Dayton (west side), from Richmond, by transfering the material at Bridge 92, New Paris.

Wherever a piece of road was opened, and cars and engines could be procured, passenger and freight service was resumed as quickly as possible. Many pieces of track were cut off from all communication, and if there was no equipment between the damaged sections, it was manifestly impossible to perform any service, but wherever a piece of track was made ready and equipment of any sort was available, "make-up" trains were run.

All through passenger schedules were annulled except three Pittsburgh-Chicago schedules westwardly and two eastwardly, which were run as on the previous day, over the C. & P. Division from Alliance to Cleveland, from there to Pine (Clarke Jct.) over the Lake Shore road and thence to Chicago over Pennsylvania Lines tracks.

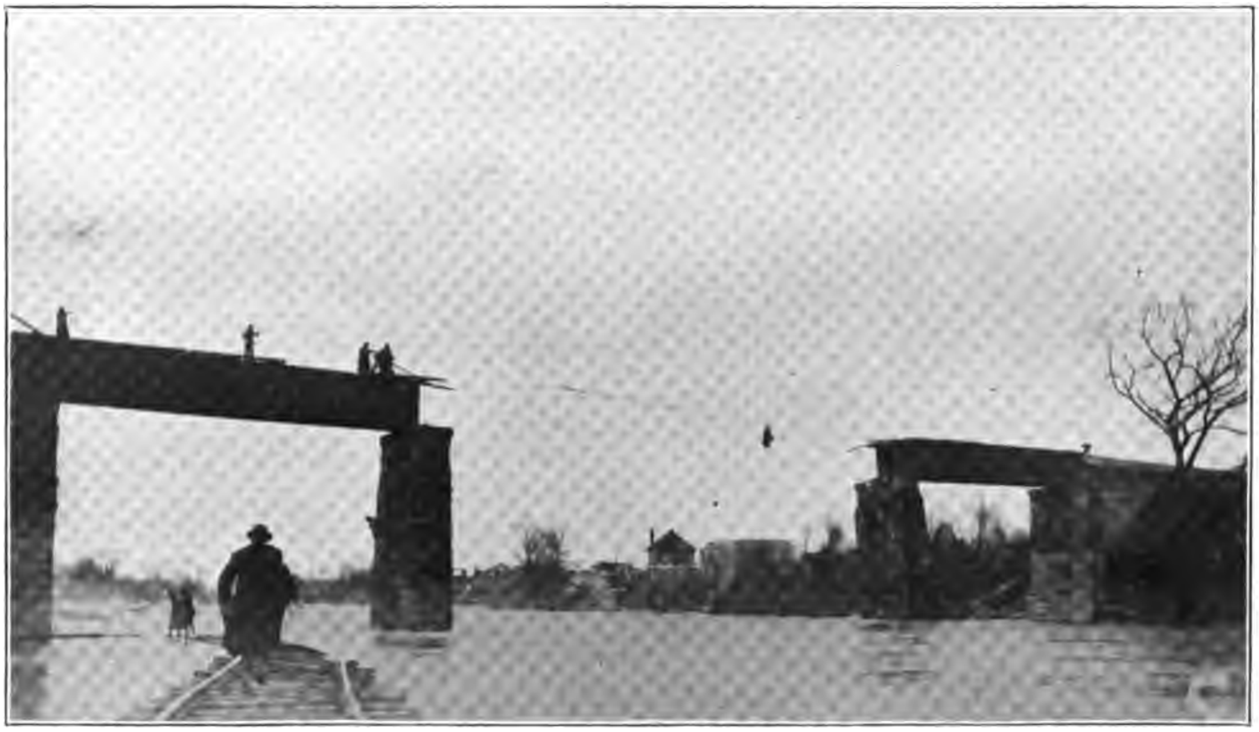
Toward evening it was found that the Erie Railroad would be able to open its line between Akron and Mansfield during the night, offering another detour route; and arrangements were made to put on additional service, using this route, on the following day.

This was the last day of the rain. In the morning, inquiry of the Pittsburgh Weather Office elicited the information that the last of the "Lows" had been succeeded in the southwest by higher pressure, and was moving northeastwardly over Indiana and Ohio, to be followed by clearing and fair weather. The storm center passed a little south of its usual course, and instead of following the valley of the St. Lawrence, moved over New York and the New England States, and gave them a taste of the experience the Central States had been having since Sunday. The damage done was not great, but was sufficient to interfere for 24 hours or more with public utilities service in many of the eastern cities and towns, and damaged the railroads more or less.



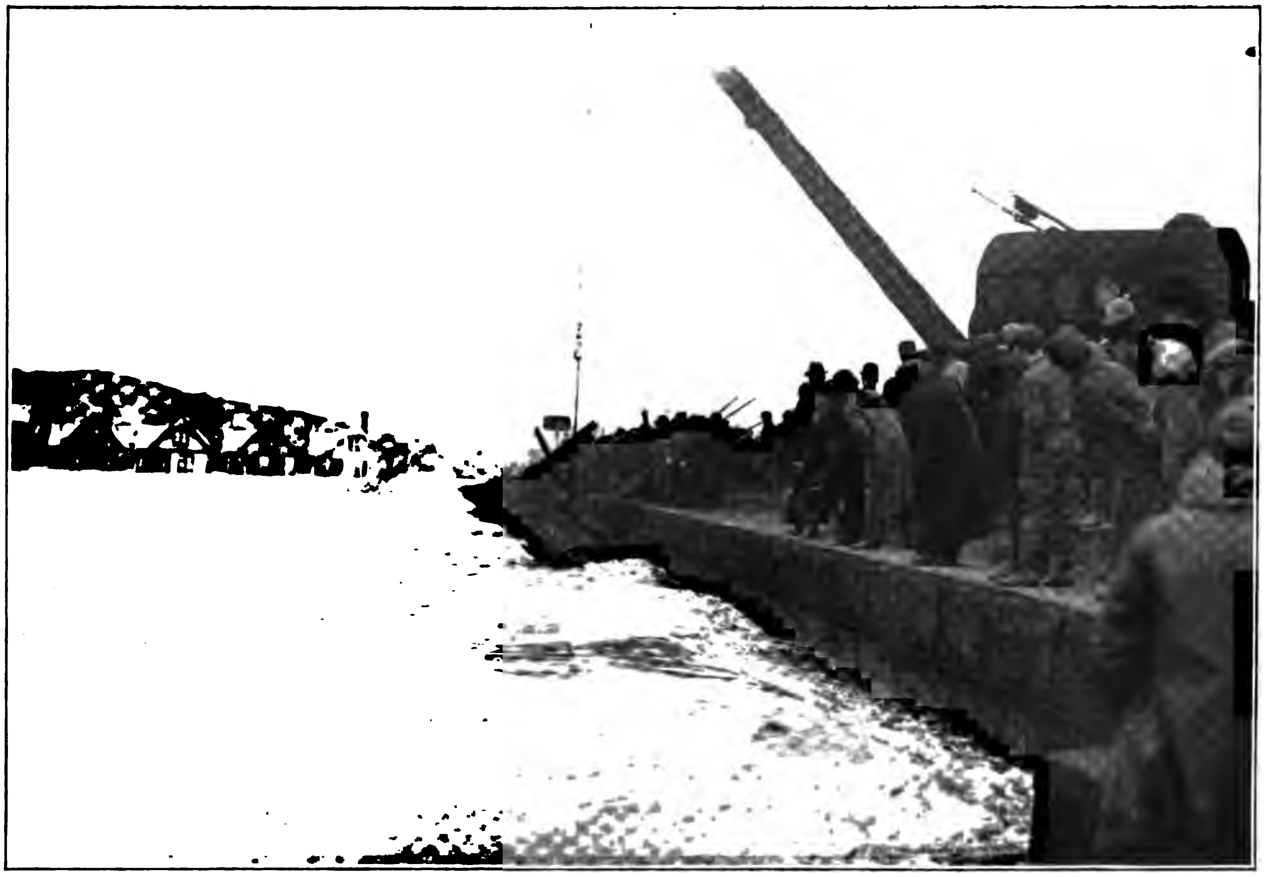
Rochester, Pa. March 27, 1913.

C. & P. Division bridge over Beaver River in foreground; P. & L. E. bridge over Ohio River in distance.



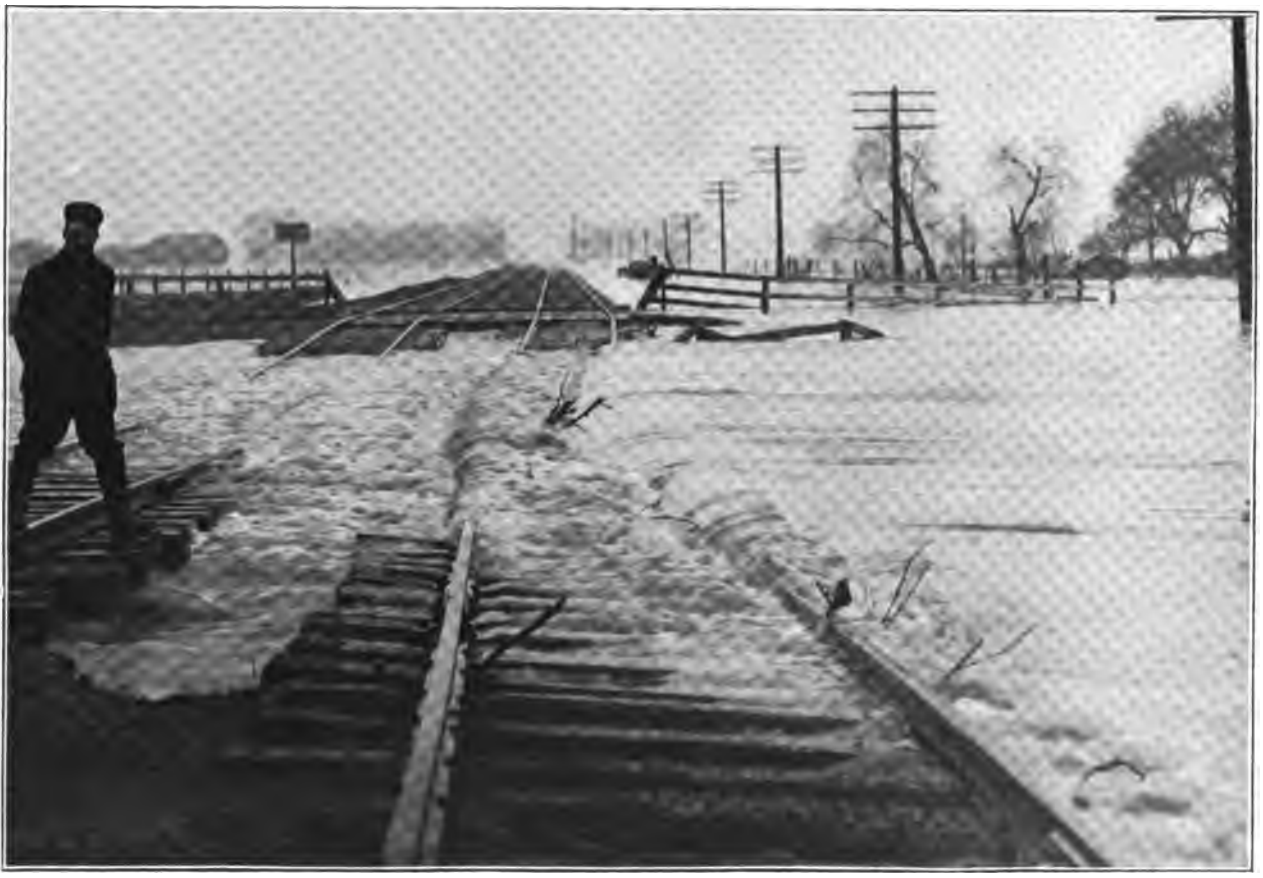
Delaware, Ohio. March 27, 1913.

Big Four Bridge spanning Sandusky Branch track and Olentangy River. The only means of getting from the east side to the west side of the town was by means of a basket pulled across this cableway, and used for several days continuously.



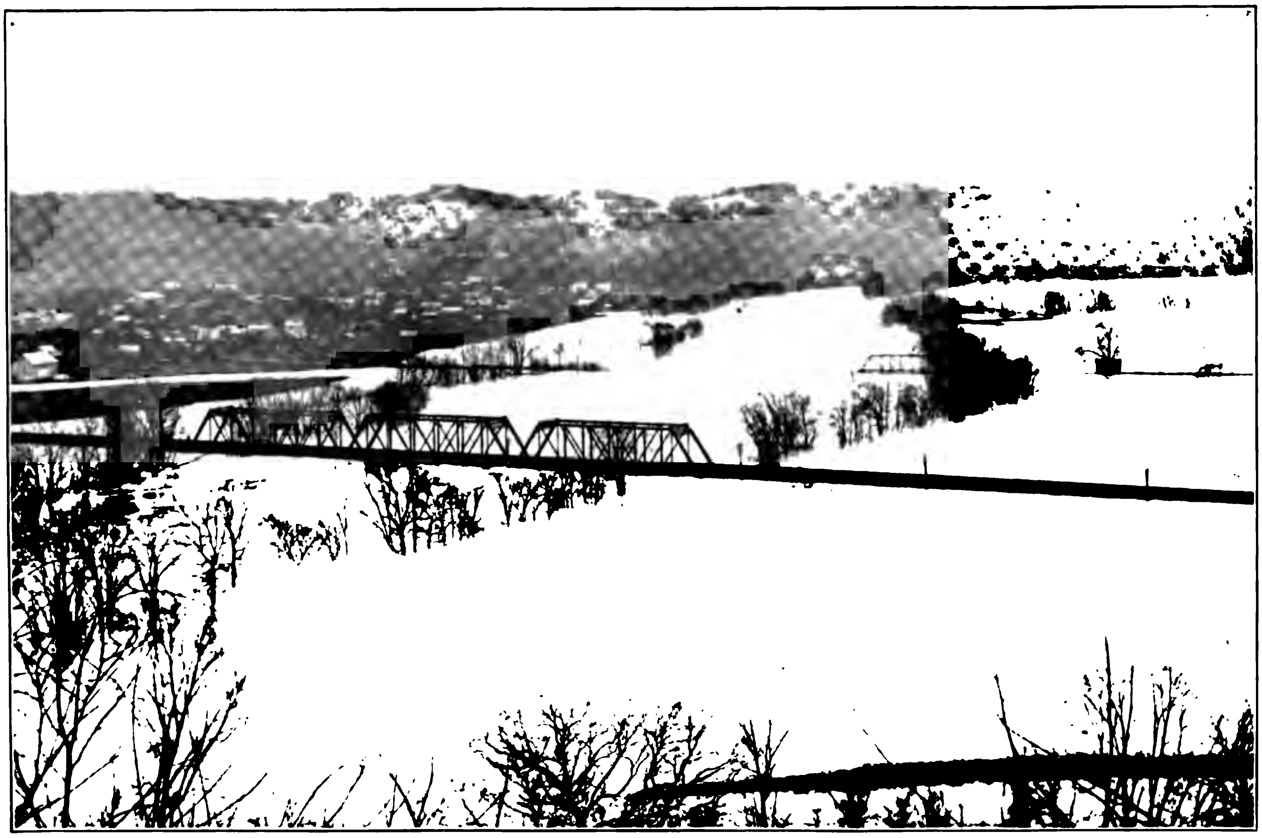
Uhrichsville, Ohio. March 27, 1913.

Removing part of a dwelling which lodged against stone arch.



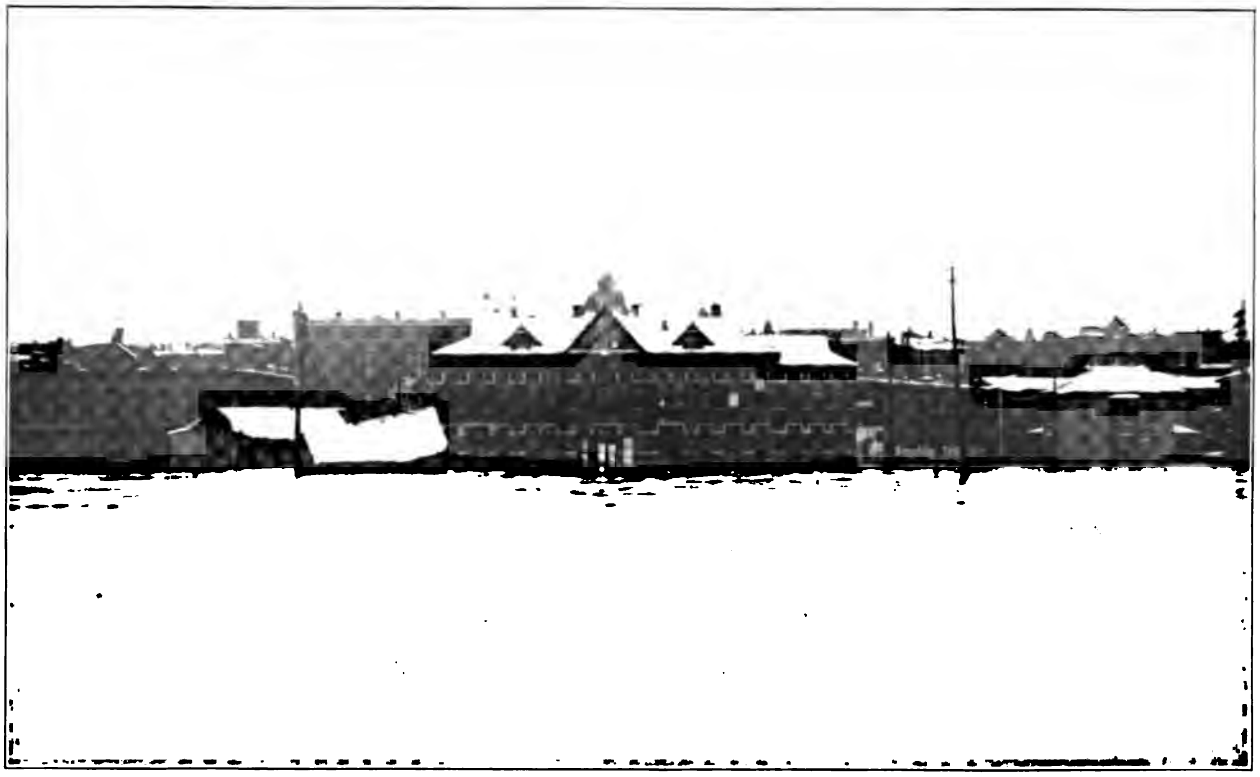
Tuscarawas, Ohio, west of. March 27, 1913.

Water had fallen 10 inches, but roadbed was later washed out from four to eight feet deep for a distance of 125 feet.



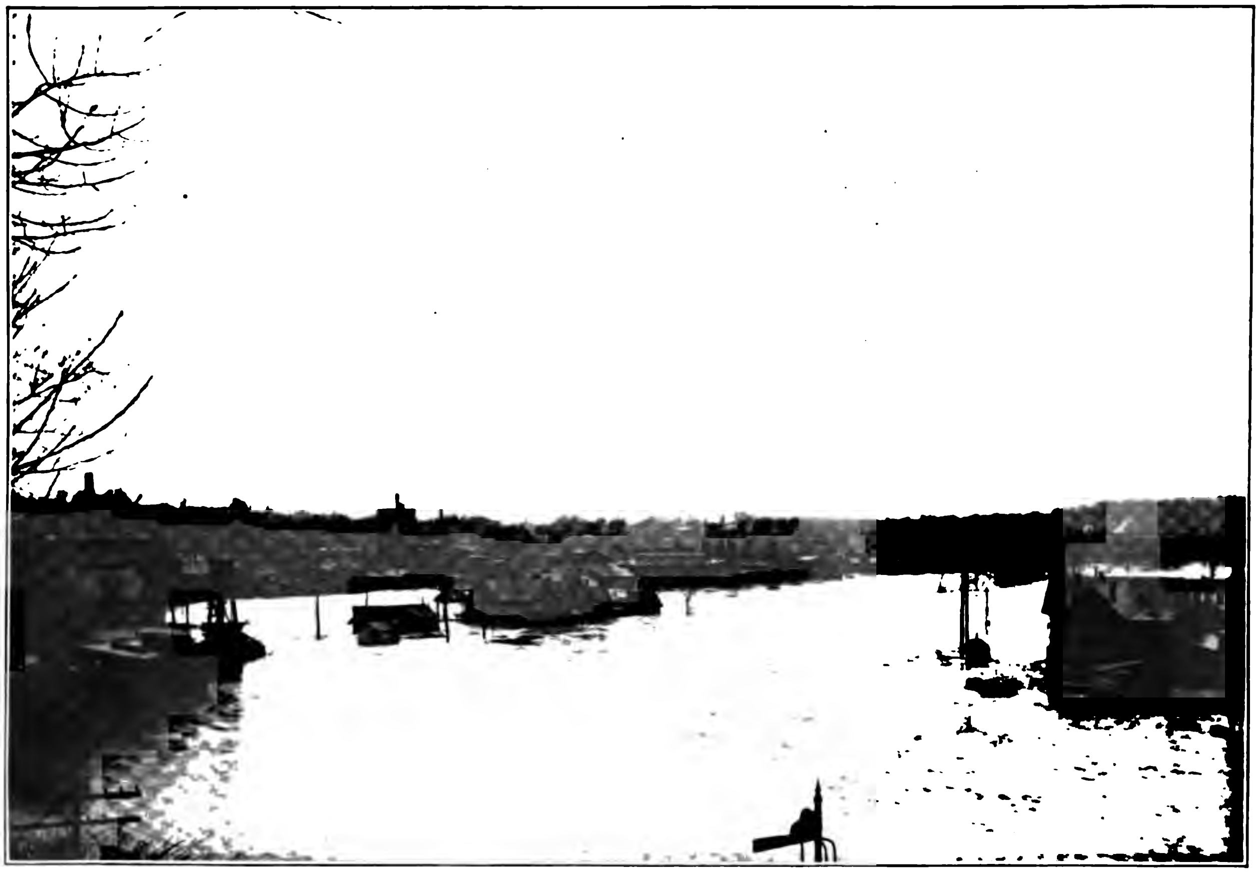
Gnadenhutten, Ohio. March 27, 1913.

Bridge 92, Pittsburgh Division, over Tuscarawas River. County bridge below washed away.



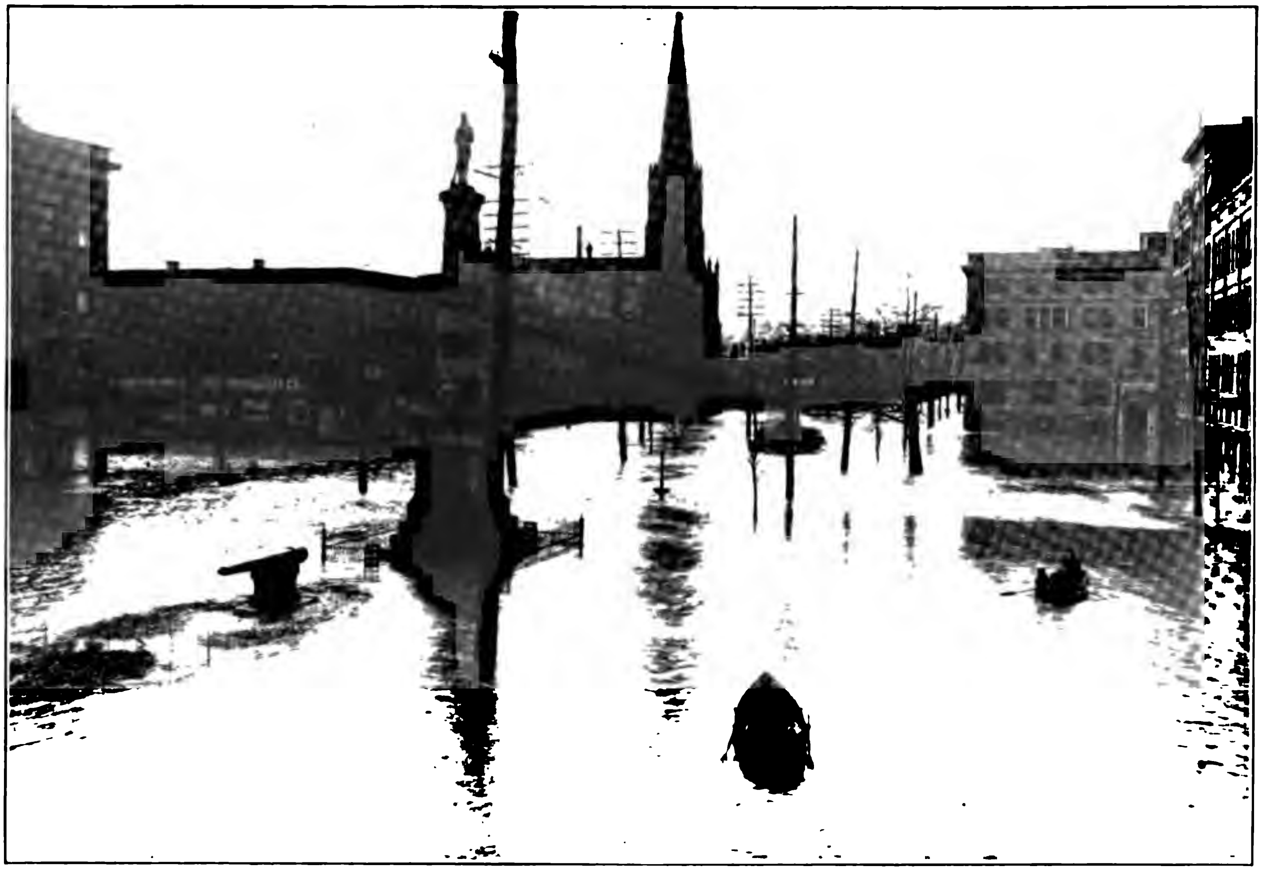
Logansport, Ind. March 27, 1913.

Passenger Station from Biddle's Island, in Wabash River. Water had gone down about three feet. Snow on roofs of buildings.



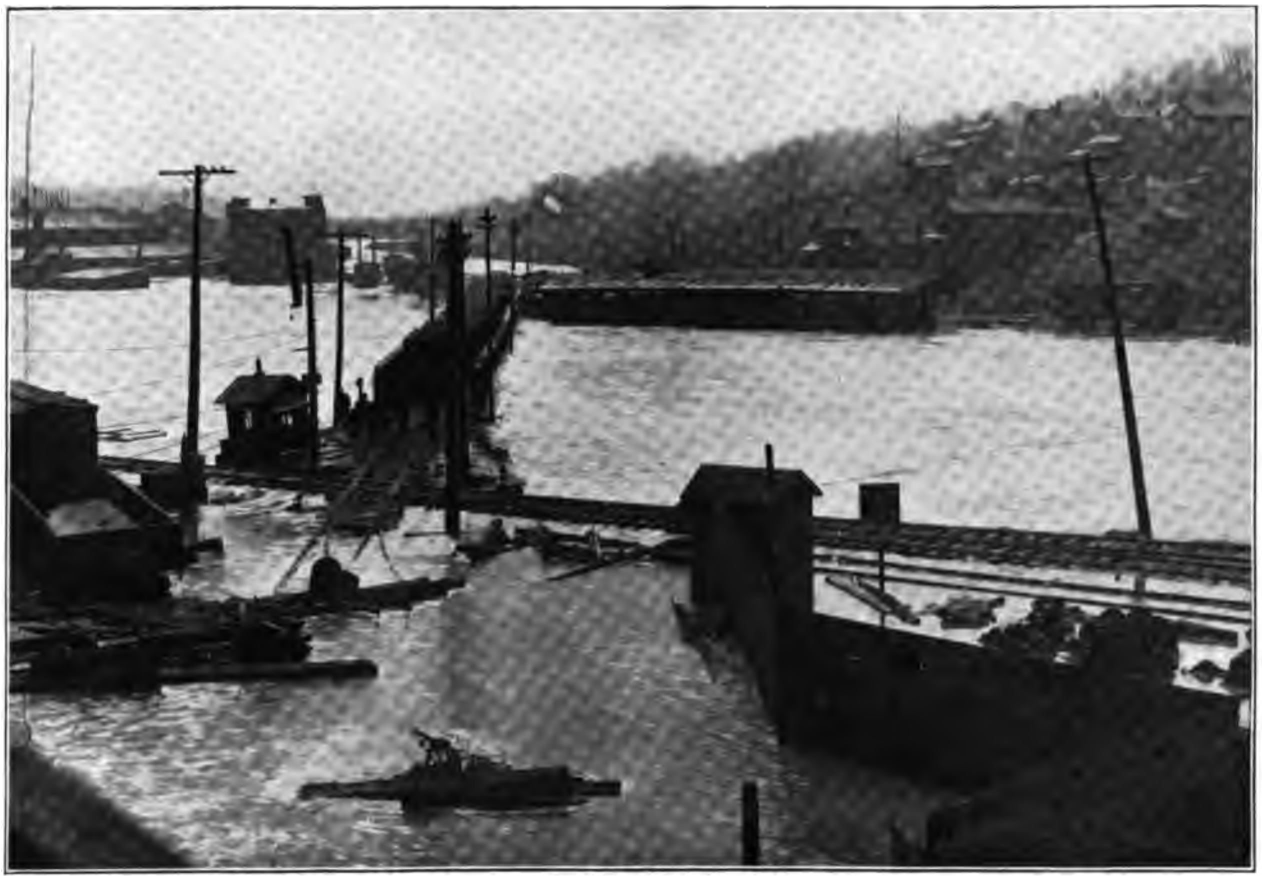
New Castle, Pa. March 27, 1913.

E. & P. distant signal at Grant Street in foreground at center and telegraph line in lower left hand corner. Taken from Grant Street Tower looking north, after city bridge at Grant Street had gone out.



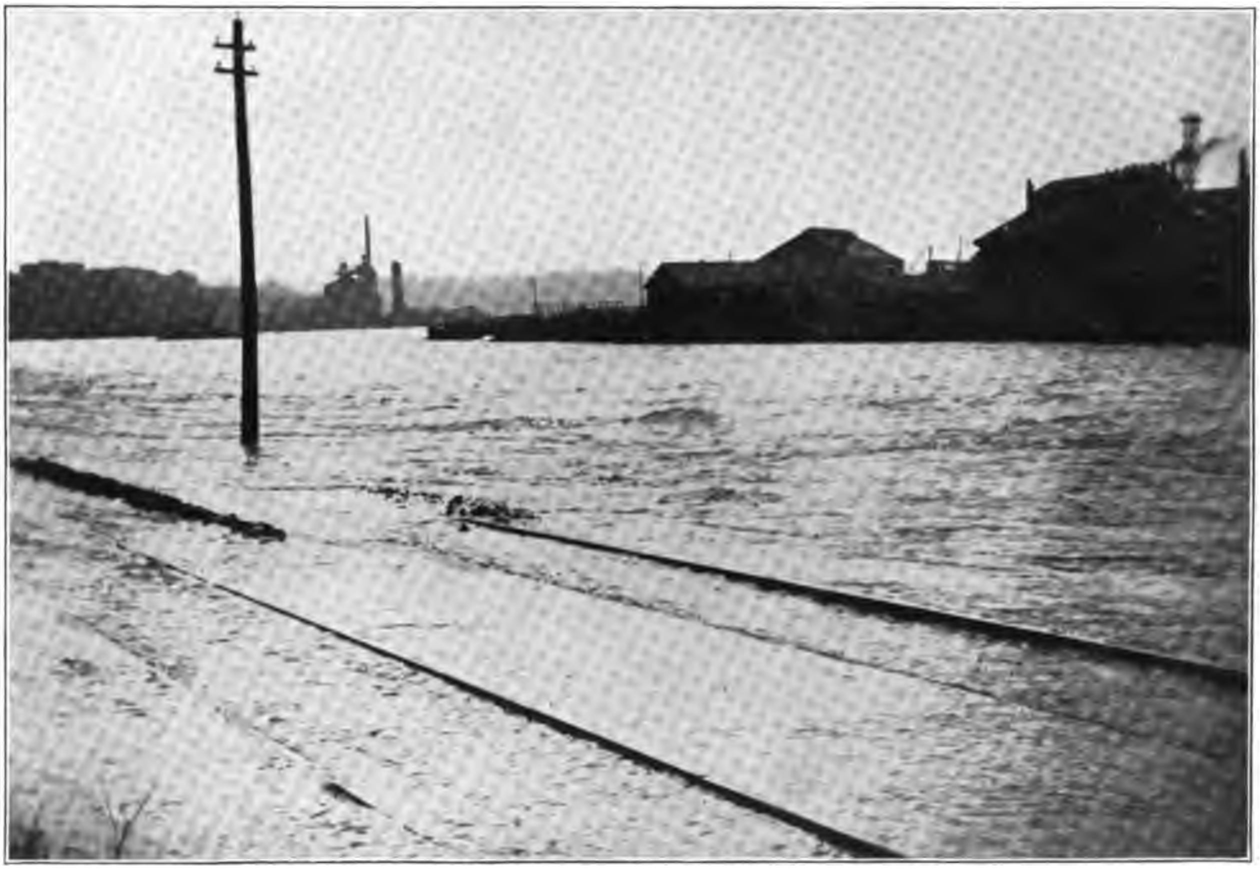
New Castle, Pa. March 27, 1913.

Water at Washington and Diamond Streets, at 10:00 a. m.



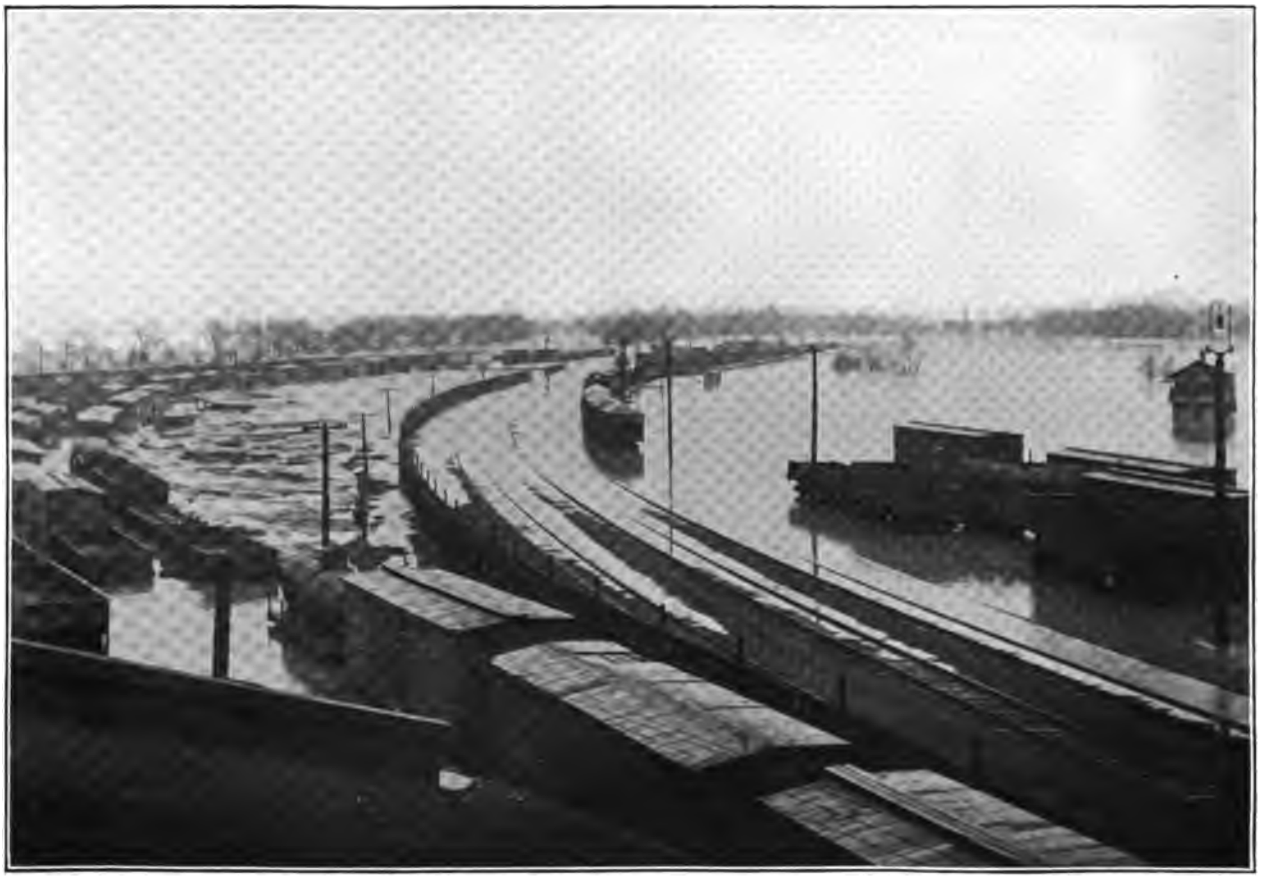
New Castle, Pa. March 27, 1913.

Old "Black Bridge," a covered wagon bridge, lodged against Pennsylvania Lines "Franklin" Bridge No. 68, over Shenango River, which later went down.



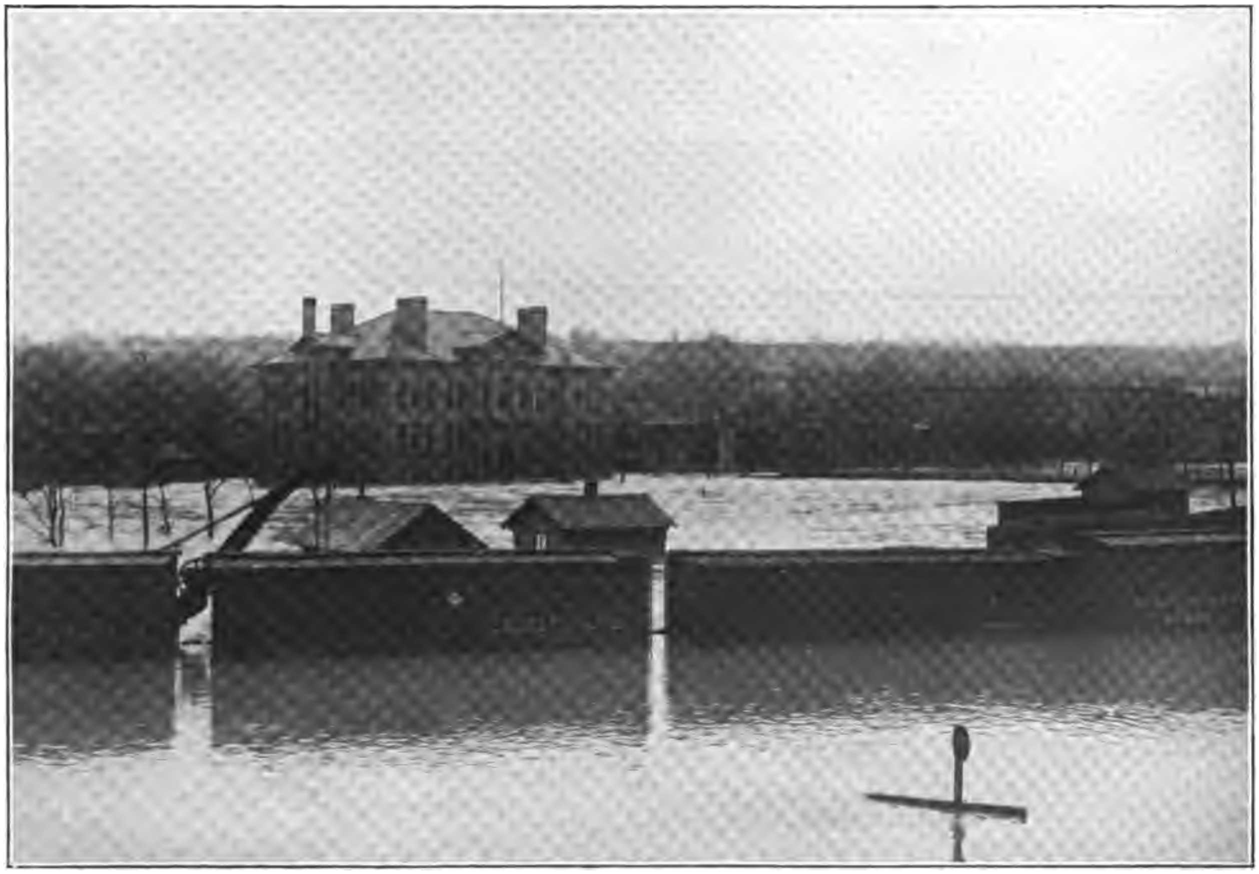
New Castle, Pa. March 27, 1913.

P. Y. & A. main tracks under water east of New Castle.



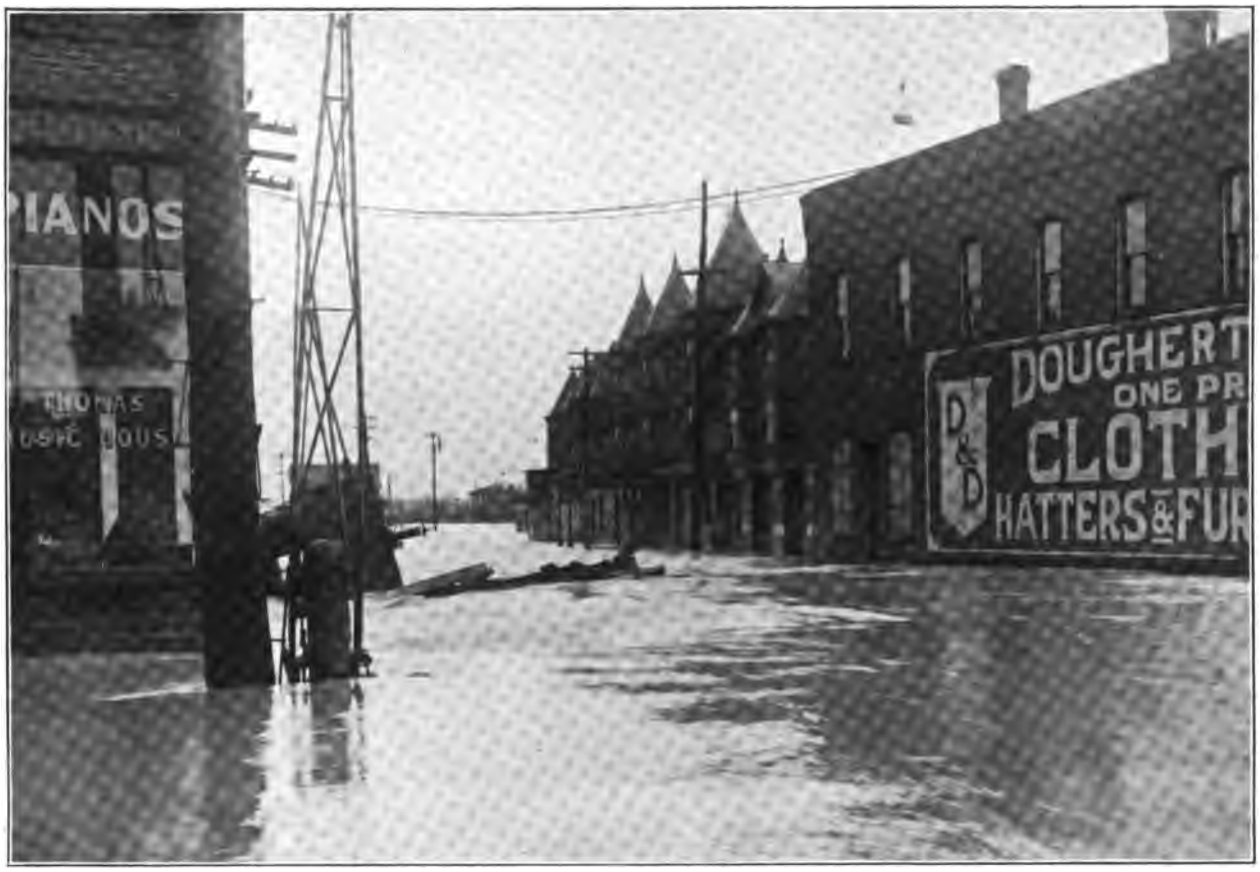
Lawrence Junction, Pa. March 27, 1913.

East from roof of enginehouse, showing P. Y. & A. main tracks in center, and part of car repair yard at left.



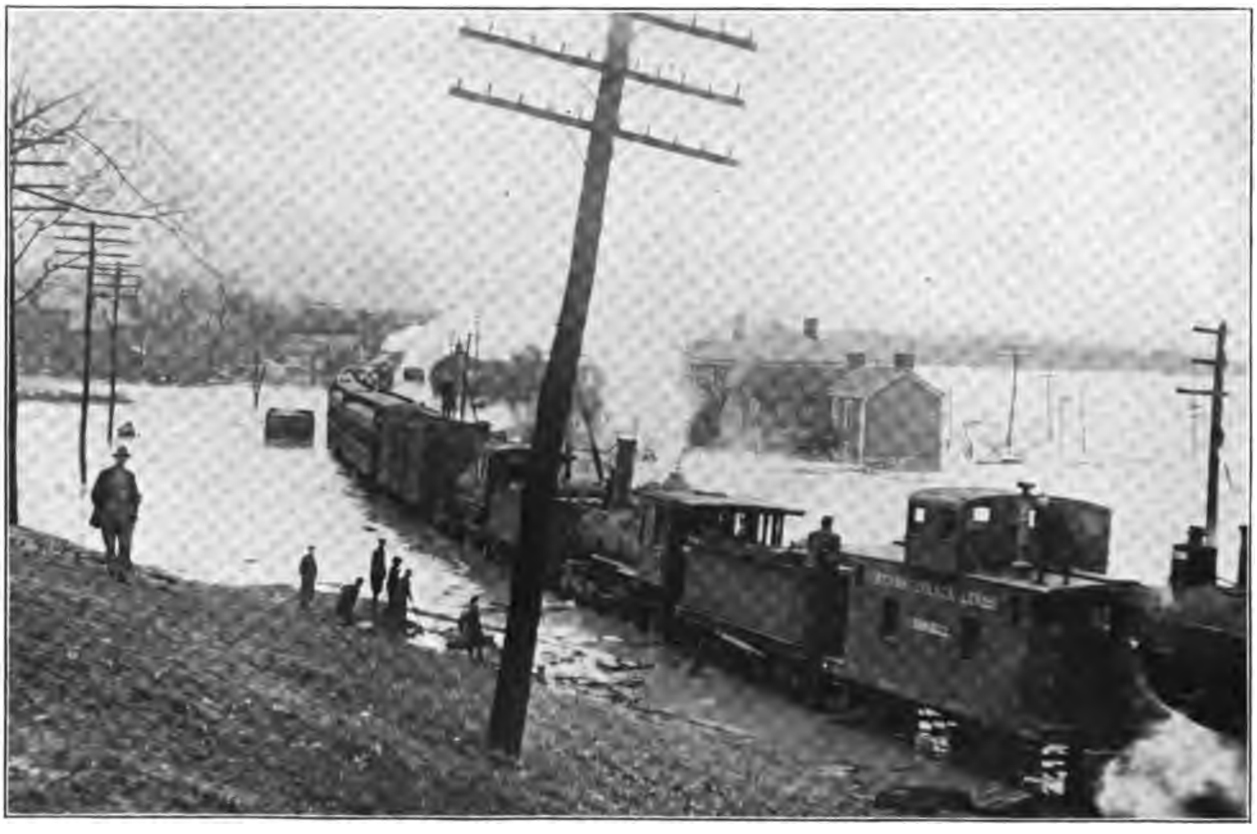
Sharon, Pa. March 27, 1913.

View from Pennsylvania Lines Station; high school building across Shenango River.



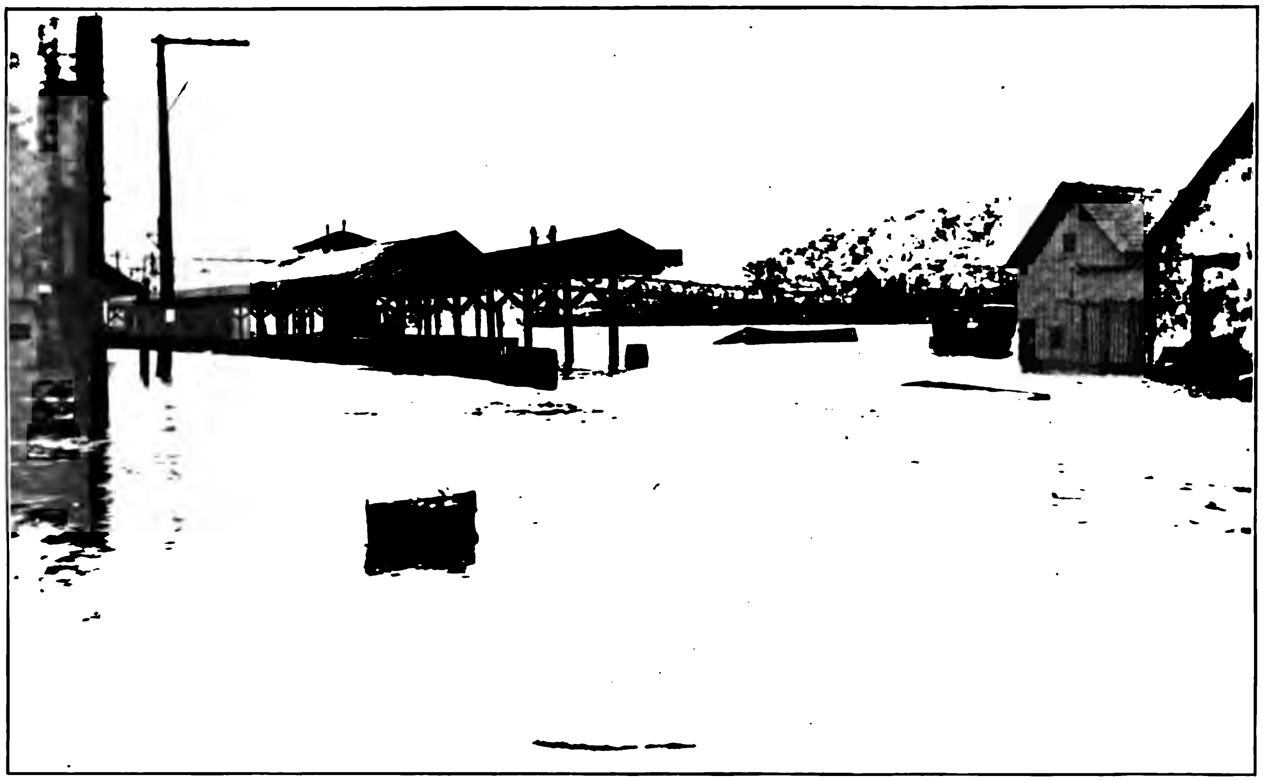
Sharon, Pa. March 27, 1913.

State Street, looking toward Pennsylvania Lines Passenger Station.



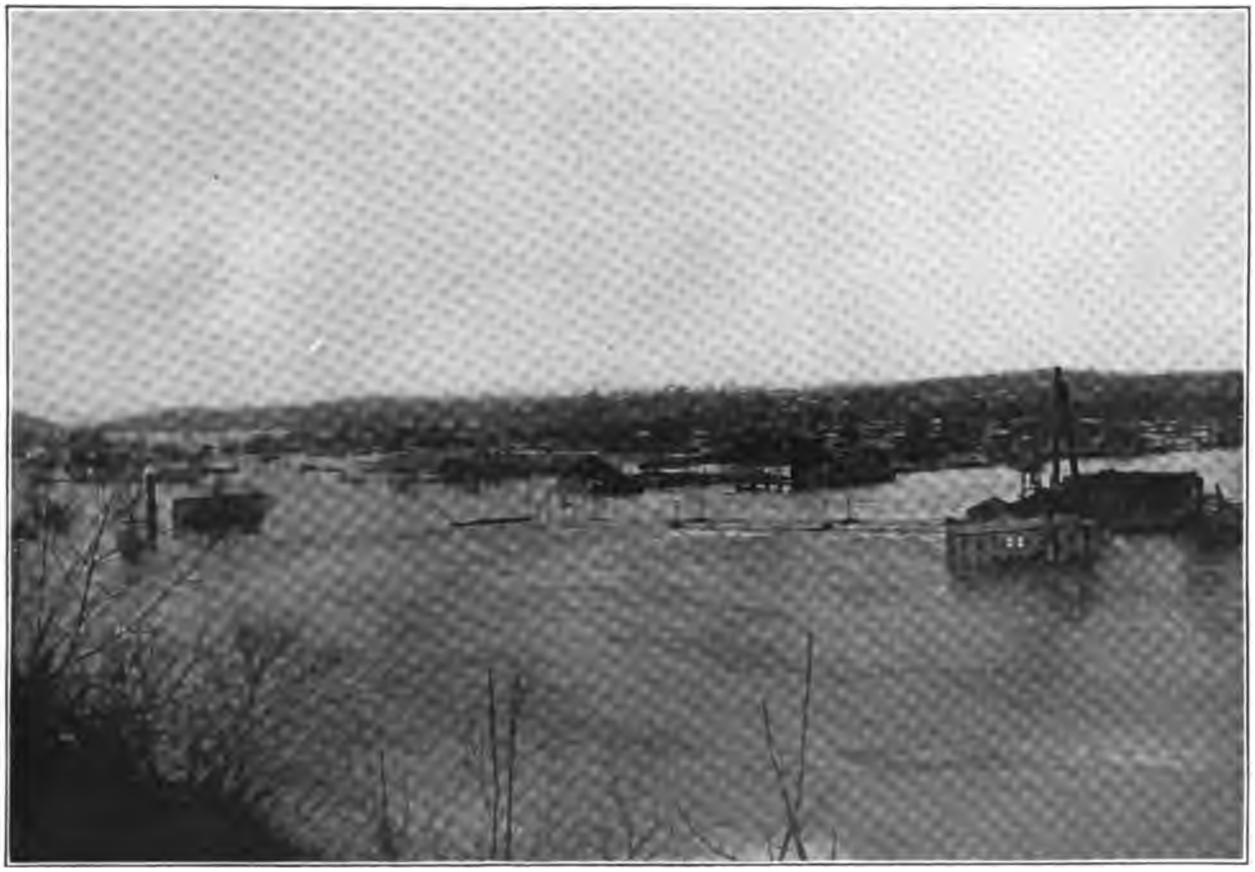
Bridgeport, Ohio. March 27, 1913.

Cleveland & Pittsburgh Division equipment being moved from Bellaire to high ground.



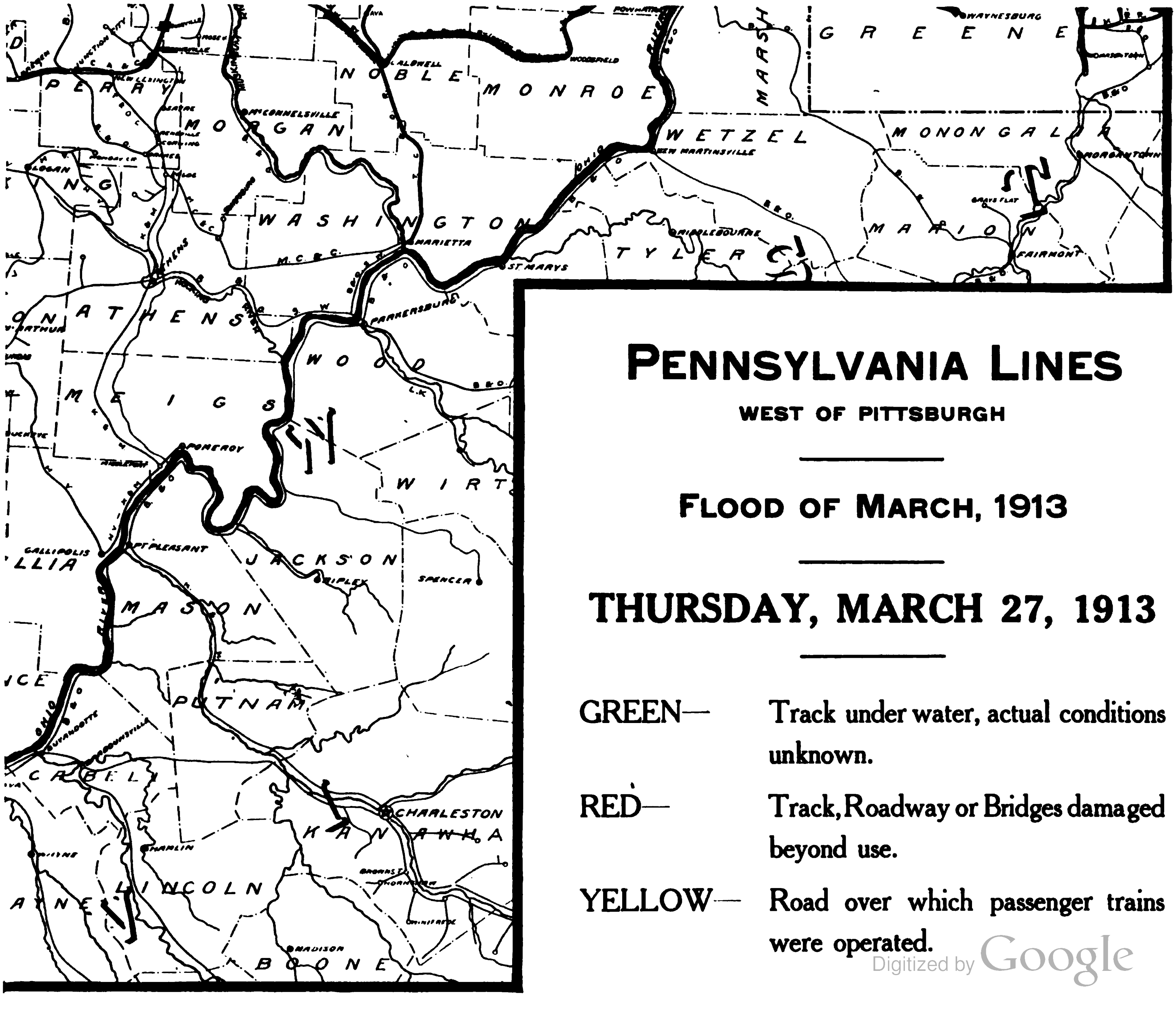
East Liverpool, Ohio. March 27, 1913.

West end of Passenger Station platform.



Zanesville, Ohio. March 27, 1913.

Water at highest—" Y " bridge at junction of Muskingum and Licking rivers completely submerged.



PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

THURSDAY, MARCH 27, 1913

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CHAPTER 5.

FRIDAY, MARCH 28, 1913.

The fourth day of the flood dawned clear and colder, much to the relief of everyone; with the water stationary or falling in all the streams except the Ohio and the lower courses of its main tributaries, which had not yet reached their maximum height. As the flood receded here and there, it became possible to ascertain the extent of the damage done, and to attack many repair jobs which could not be reached while the water was up.

The submerged towns in districts not usually subject to flood now emerged from the water, and, as such towns as were still afloat were quite accustomed to the experience and prepared locally to handle the situation, there was no longer any work of rescue to be done. Relief of those in need, by moving supplies of food and clothing, tents, etc., as rapidly as possible, was the most urgent task at hand. The organization for the large repair jobs, and gathering of material and tools, continued to be the main task at the general offices. The men in the field were pushing the repair work as rapidly as possible, usually working day and night without remission.

By utilizing the detour route from Akron to Mansfield over the Erie Railroad, four eastbound and three westbound through passenger trains between Pittsburgh and Chicago were run, in addition to two in each direction detoured via the Lake Shore road as on previous days. Passengers for Chicago on the Southwest System who had gotten only as far as Columbus were taken in a made-up train to Crestline over the Big Four road (which had been opened during the night) and sent to Chicago over the Ft. Wayne route.

The Erie Line between Akron and Mansfield, however, over which it was hoped to resume almost complete service, was not yet able to handle a heavy traffic. The double track was broken in a number of places, necessitating "single-lining;" several bridges were so weakened that double-headed trains could not be run over them, and the leading engine had to be detached and run over separately and coupled up again after the train had crossed; the telegraph service had been badly crippled, and the best that could be had was a very slow and uncertain service.

One track being open over the Scioto River bridge at Marble Cliff, it was found possible now to run relief trains into east Dayton from Columbus, by way of the Indianapolis Division to Urbana, the Big Four road Urbana to Springfield, and Pennsylvania Lines Springfield to Dayton through Xenia. But after this route had been used by two relief trains for Dayton, and three or four local trains between Columbus and Urbana, the broken pier under the Scioto River bridge settled further, making the bridge unsafe for any traffic, and this route to Dayton was broken. A train was sent from Richmond to Miami City (West Dayton) with relief supplies, by transferring them at Bridge 92, New Paris, as on the previous day.

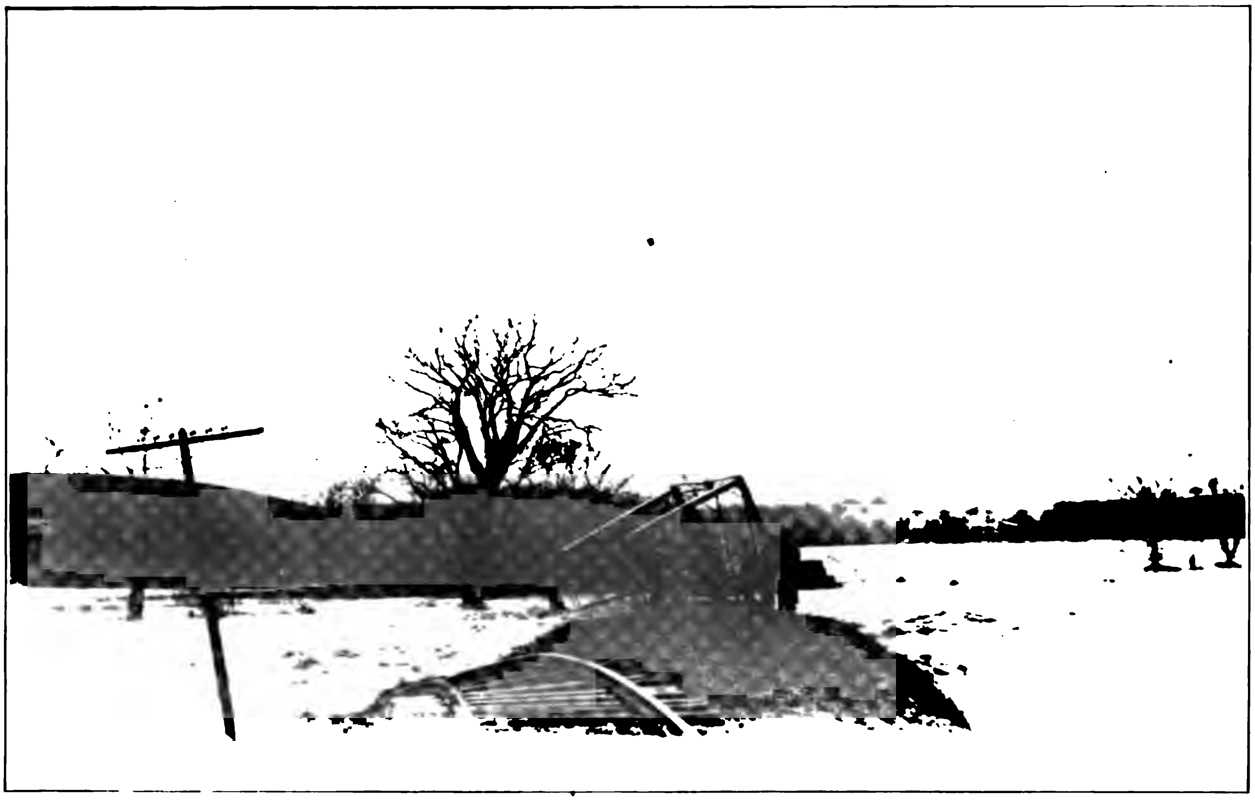
The matter of taking passengers into Dayton was placed in the hands of the authorities of the State of Ohio, who decided that only those having business there in connection with the relief work should be permitted to enter. Arrangements were made accordingly and for a considerable period no tickets were sold to Dayton until the matter had been explained to the purchaser. As relief, medical, and surgical supplies and persons in charge of them were carried free upon proper identification, this action had the effect of keeping the merely curious out of Dayton, where all food supplies available were needed for the residents. Under martial law, all sight-seers were put to work to clean up the debris, but they were "few and far between."

Attention was now diverted from Dayton to Zanesville and Hamilton, where similar conditions prevailed. On account of lack of telegraph or telephone communication, the situation at these points was not generally known, but the meager reports received indicated that there had been a repetition of Dayton's experience at both points, as well as at many others, on a smaller scale.

Service, both passenger and freight, was now being performed or was resumed during the day or night, over more or less disconnected portions of the line as follows:

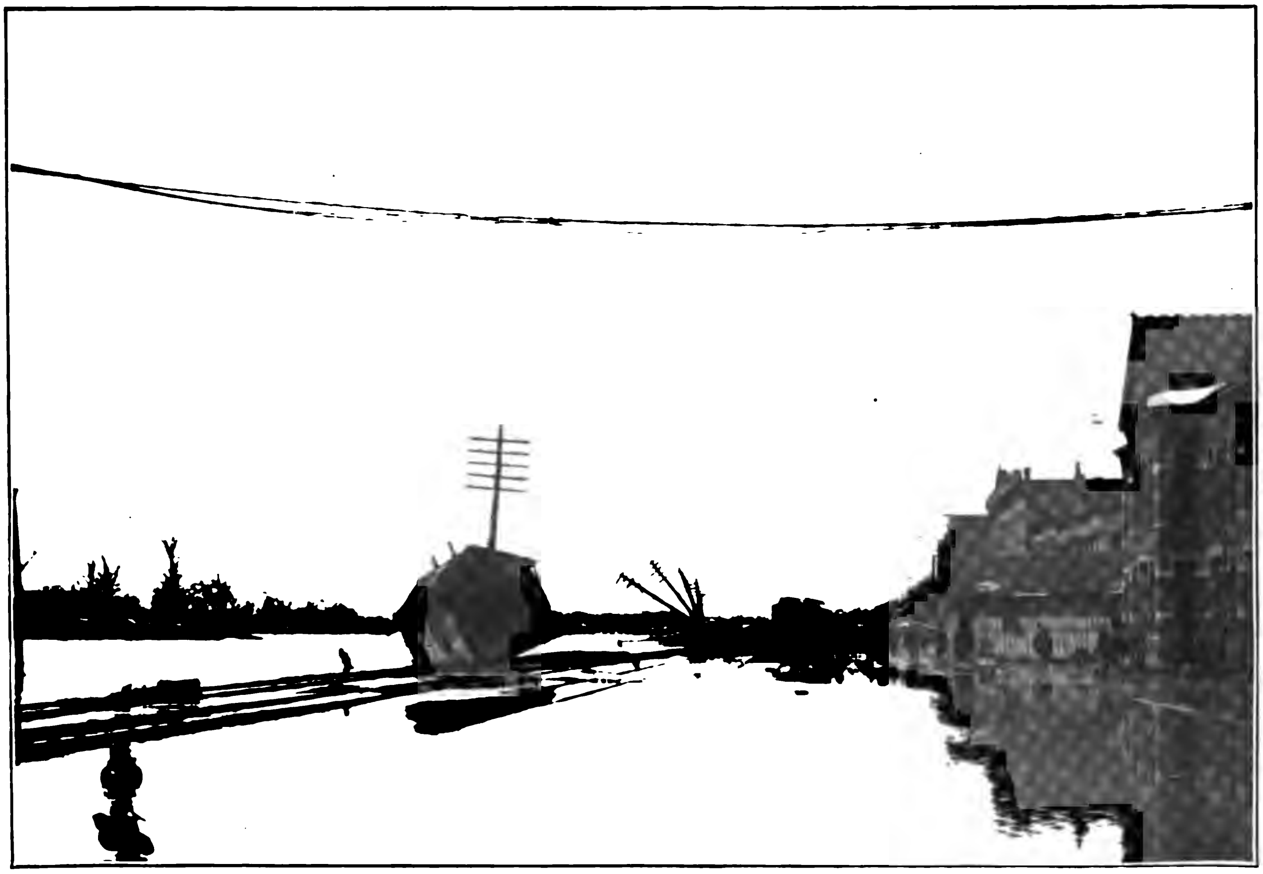
Between Pittsburgh and Orrville, Ohio.
" Pittsburgh and Dennison, Ohio.
" Pittsburgh and Cleveland, Ohio.
" Pittsburgh and Erie, Pa.
" Pittsburgh and Washington, Pa.
" Lucas, Ohio, and Chicago.
" Bradford, Ohio, and Chicago.
" Richmond, Ind., and Chicago.
" Richmond and Indianapolis.
" Mansfield, Ohio, and Toledo.
" Columbus, Ohio, and Mount Vernon.
" Sugar Camp (just north of Delaware), Ohio, and Sandusky.
" Hanover, Ohio, and Columbus, Ohio.
" Cincinnati, Ohio, and points on C. L. & N. Ry.
" Seymour, Ind., and Louisville, Ky.
" Roseville, Ohio, and Circleville, Ohio.
" Logansport, Ind., and Muncie, Ind.,
" Indianapolis and Terre Haute, Ind. (Vandalia).
" Macksville, Ind., and St. Louis (Vandalia).
" Terre Haute and Clymers, Ind. (Vandalia).
" Logansport and Butler, Ind. (Vandalia).
" Logansport and South Bend, Ind. (Vandalia),
" Richmond and Decatur, Ind. (G. R. & I.).
" Ft. Wayne and all points north (G. R. & I.).

There were in addition some short pieces of main line, and some branches, open, over which some service was performed, but there was not, in the entire Pennsylvania Lines system, a whole railroad in service, if the C. L. & N. be excepted.



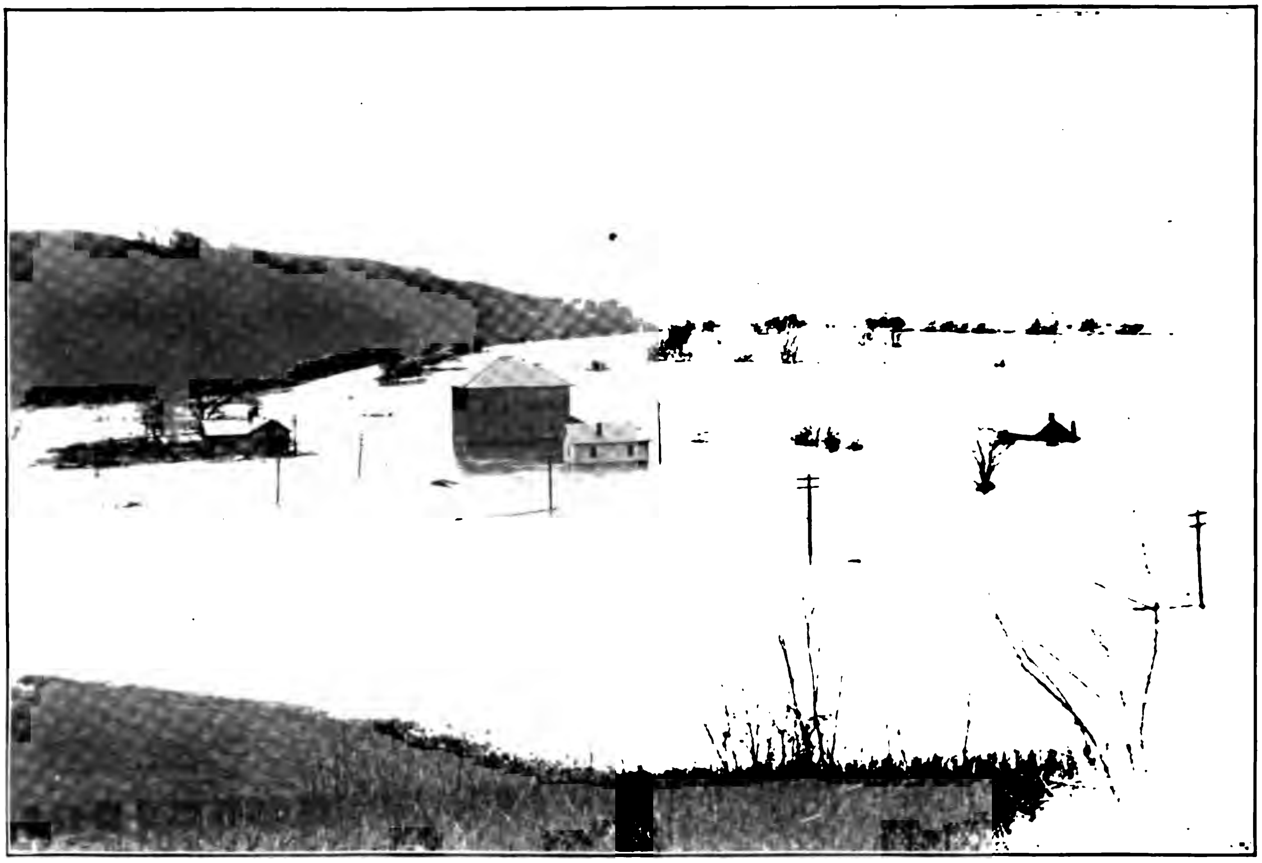
Gambier, Ohio. March 28, 1913.

Bridge 83, over Kokosing River, Akron Division.



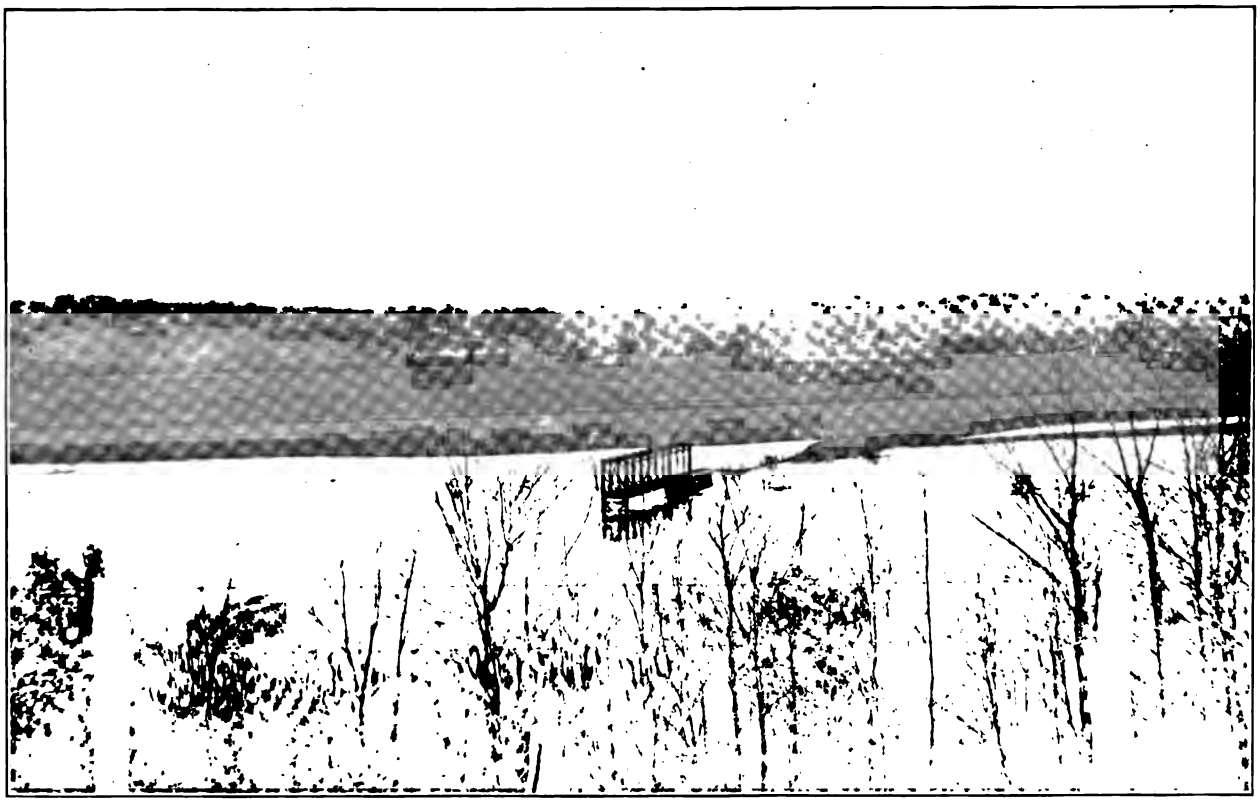
Logansport, Ind. March 28, 1913.

Passenger Station (on right) after water had receded about eight feet. Traction and wagon bridges crossed Wabash River near point where leaning telegraph poles are seen.



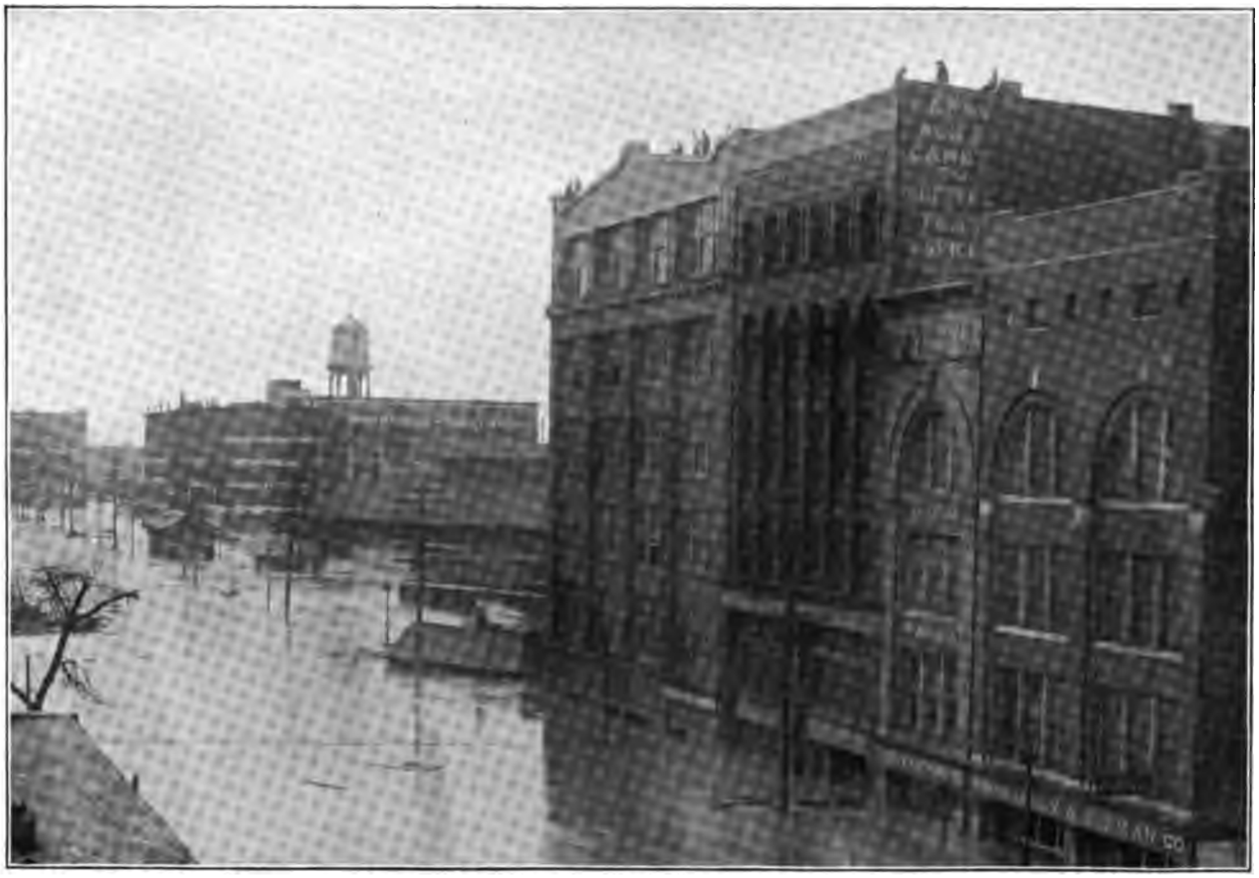
Gilbert, Ohio. March 28, 1913.

Showing Muskingum River receding, Zanesville Division track under water.



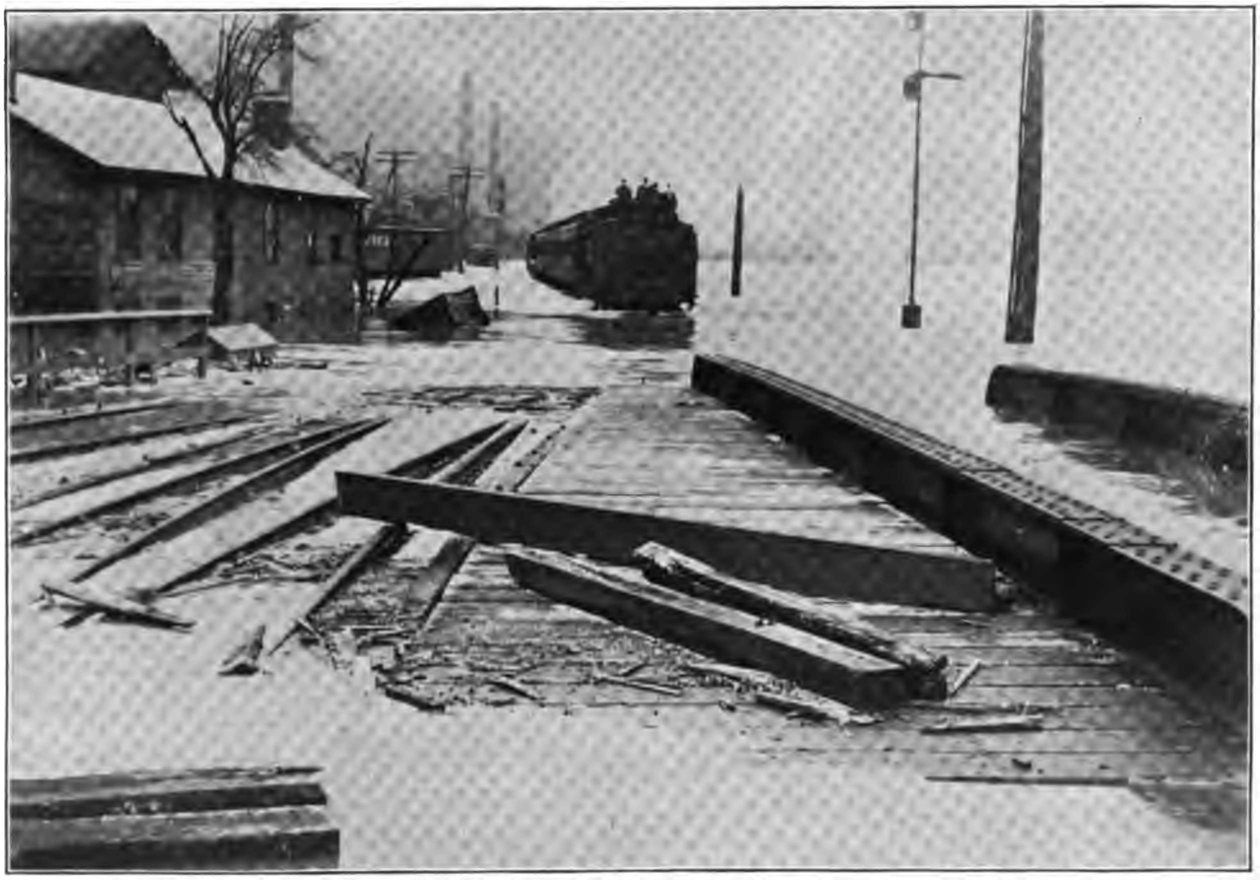
Ellis, Ohio. March 28, 1913.

Bridge 12, over Muskingum River, water receding; both approaches and all channel spans but one washed away.



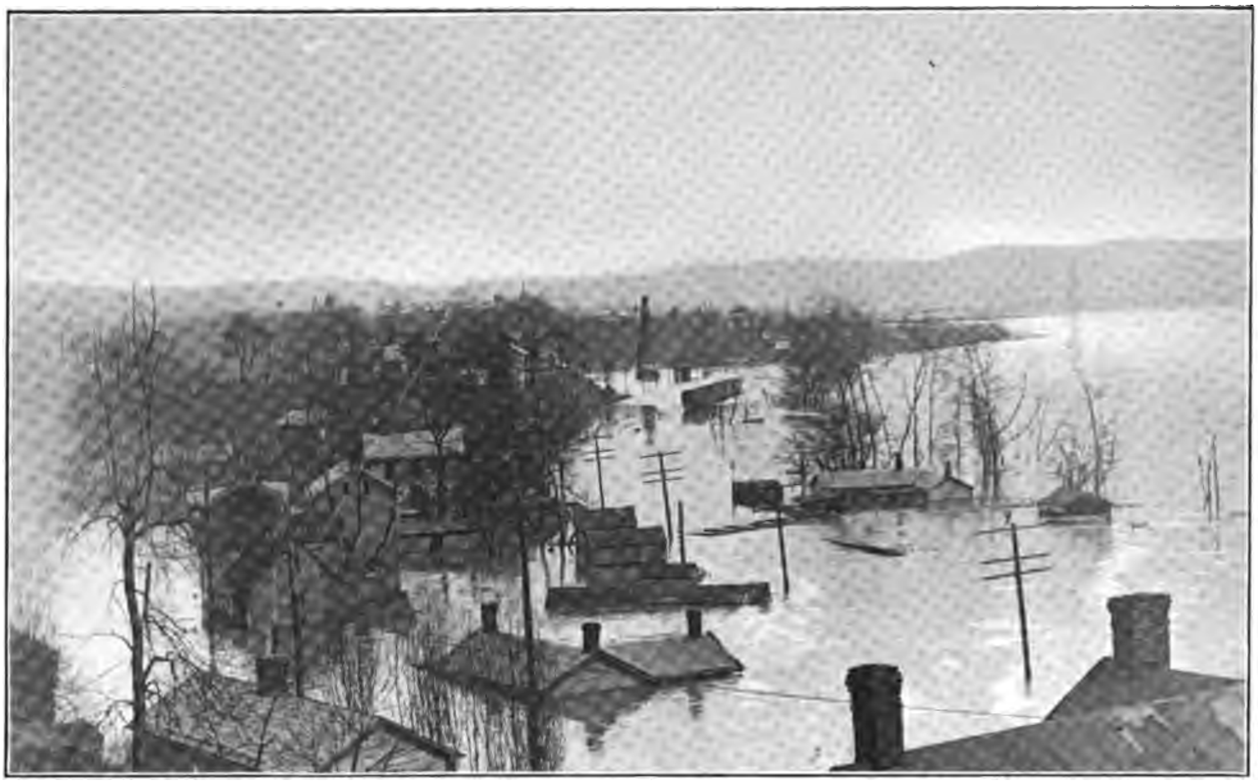
Dayton, Ohio, East Third Street. March 28, 1913.

Pennsylvania Lines Freight House just back of box cars in center of picture. Some employees were marooned on top of box cars in the rear for 22 hours, and then for 28 hours longer in a small office on open platform.



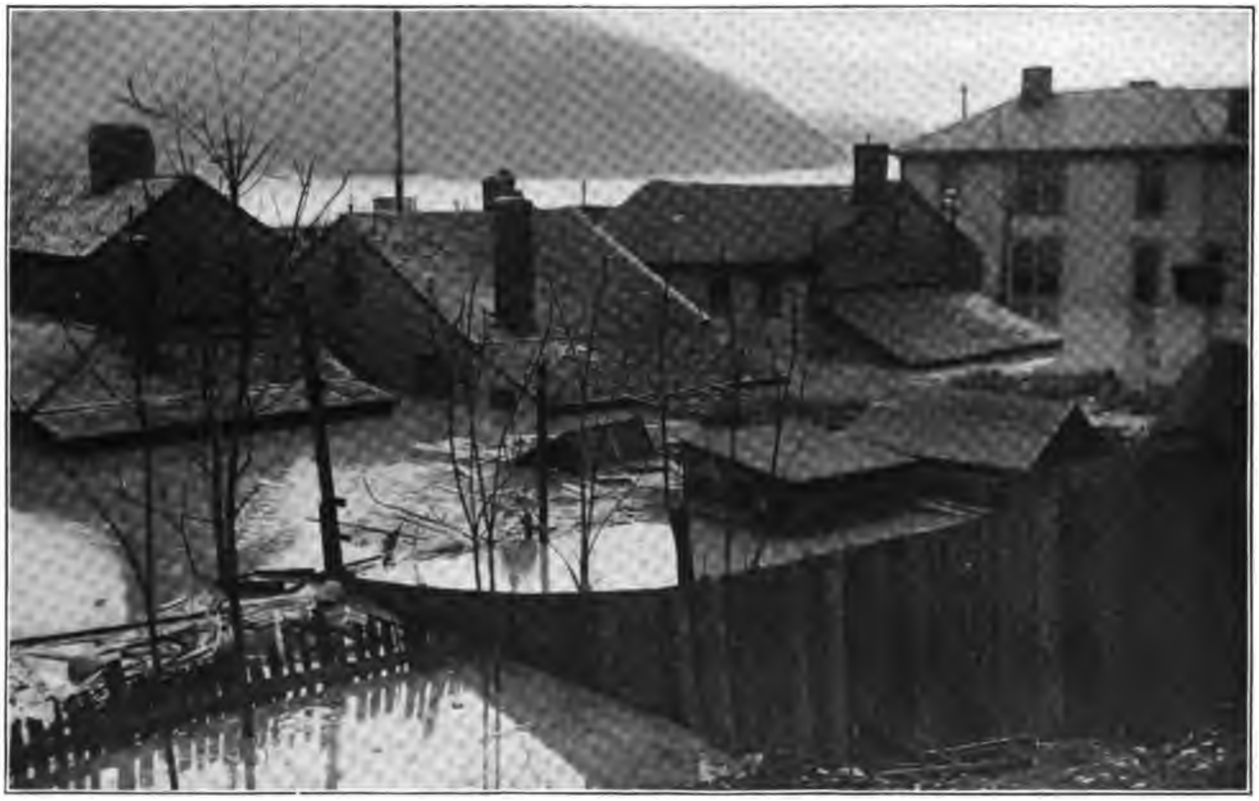
Wellsville, Ohio. March 28, 1913.

Looking east from Bridge No. 105. Platform and tracks on left of bridge floating.



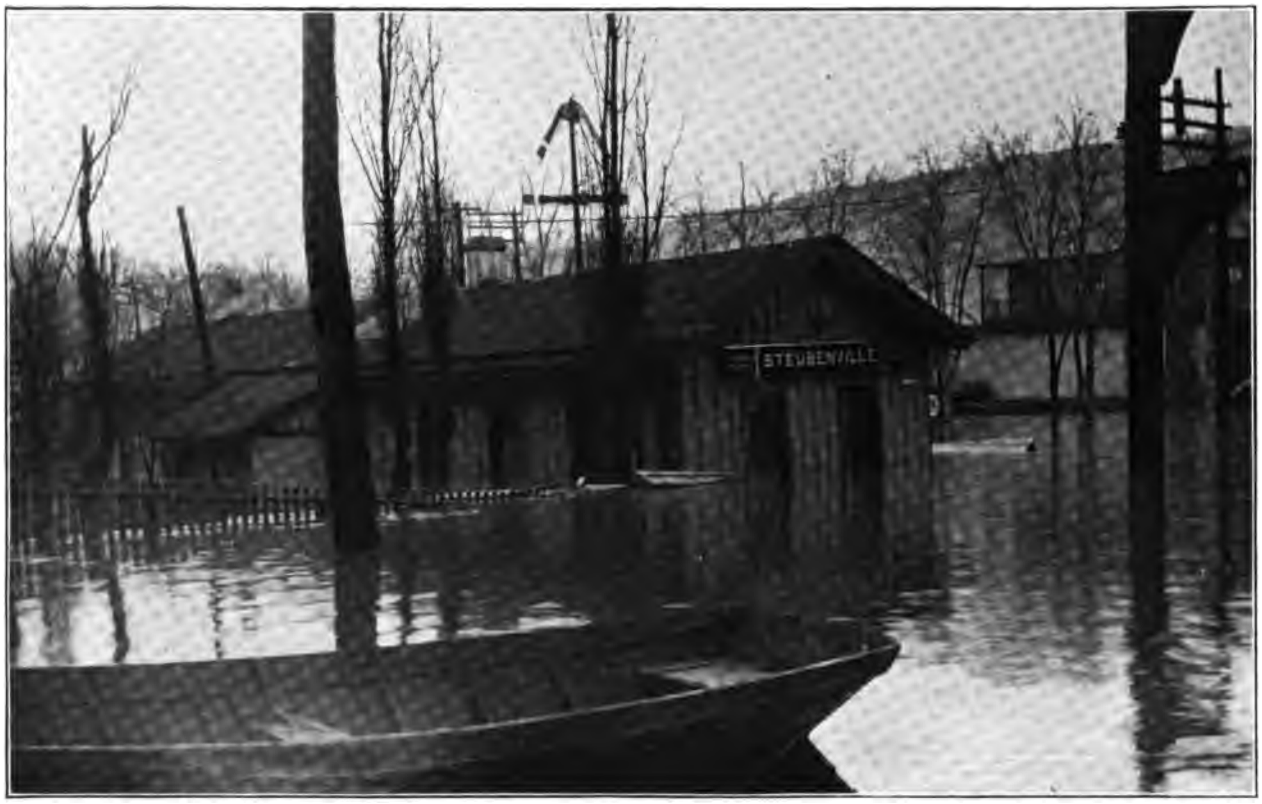
East Liverpool, Ohio. March 28, 1913.

C. & P. Division tracks under water along Ohio River at west end of city, near "Hill track."



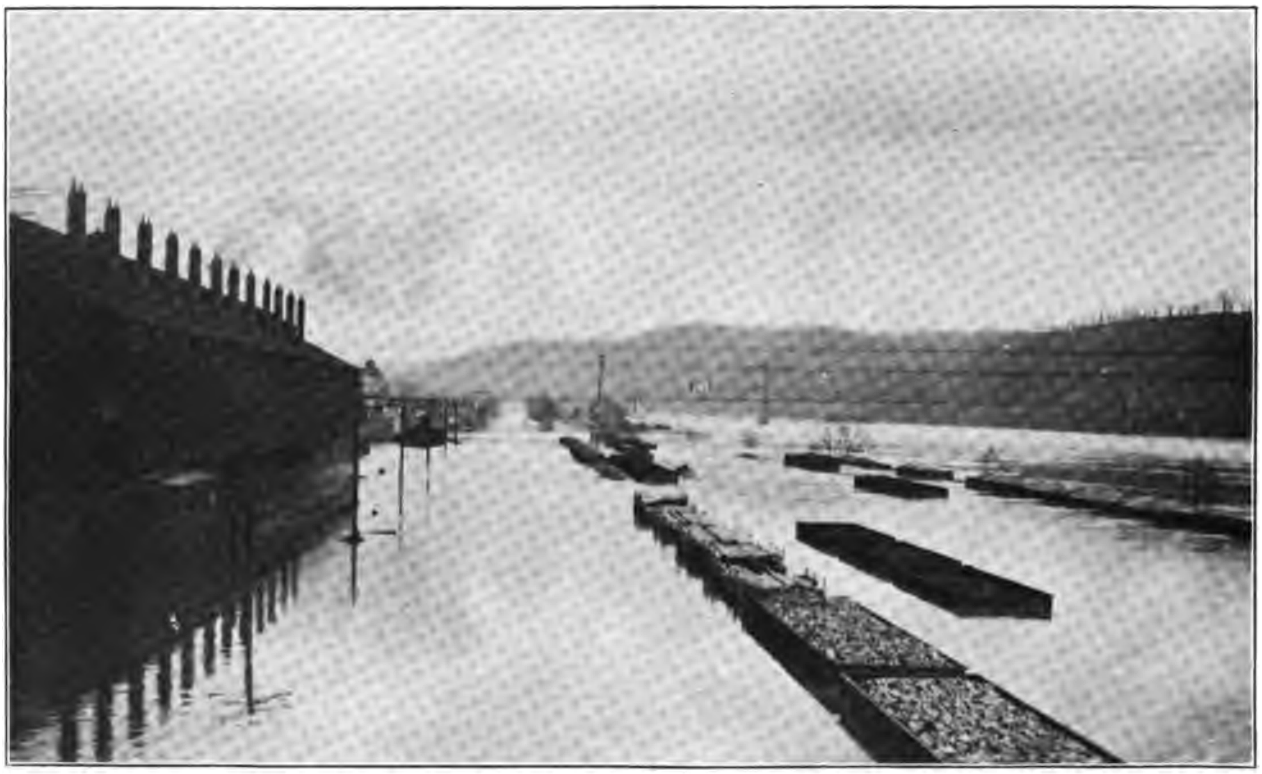
Steubenville, Ohio. March 28, 1913.

Rear of buildings which front on C. & P. Division main tracks, between passenger and freight stations.



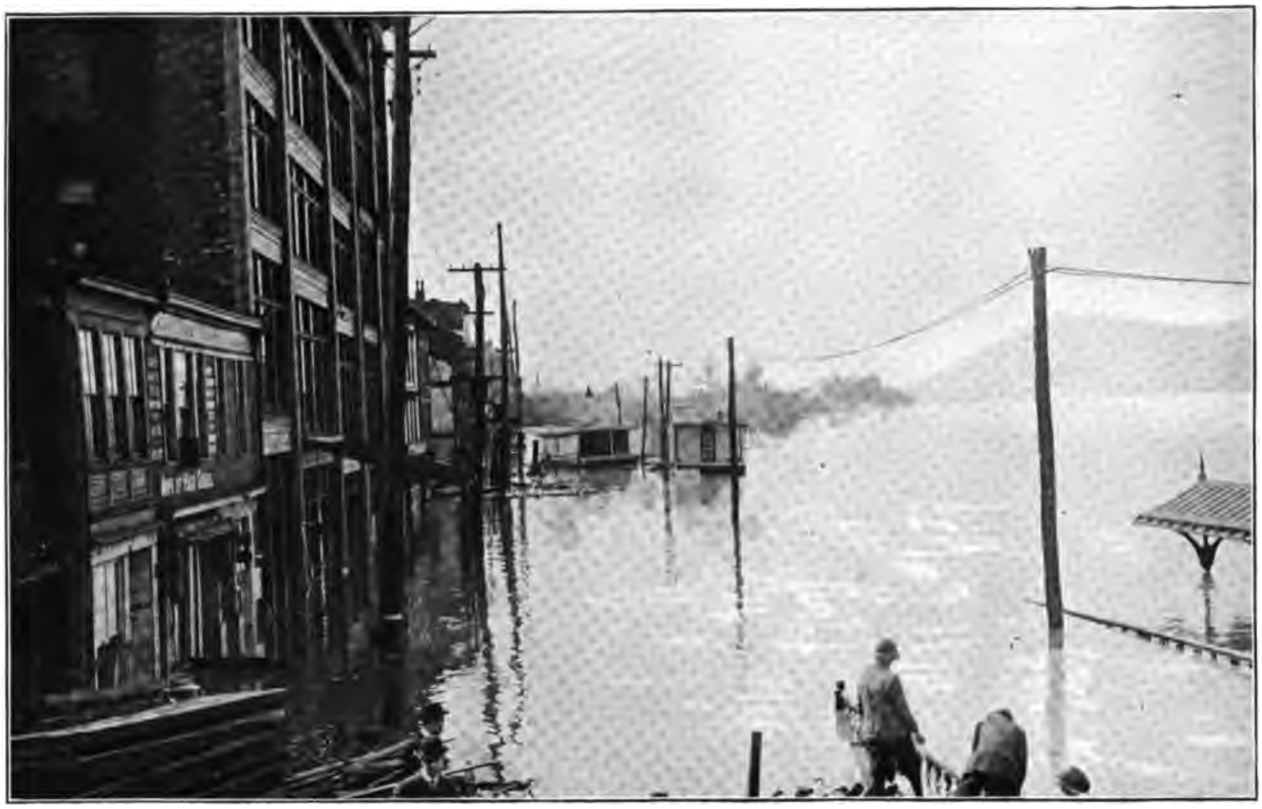
Steubenville, Ohio. March 28, 1913.

Cleveland & Pittsburgh Division Passenger Station, west end of.



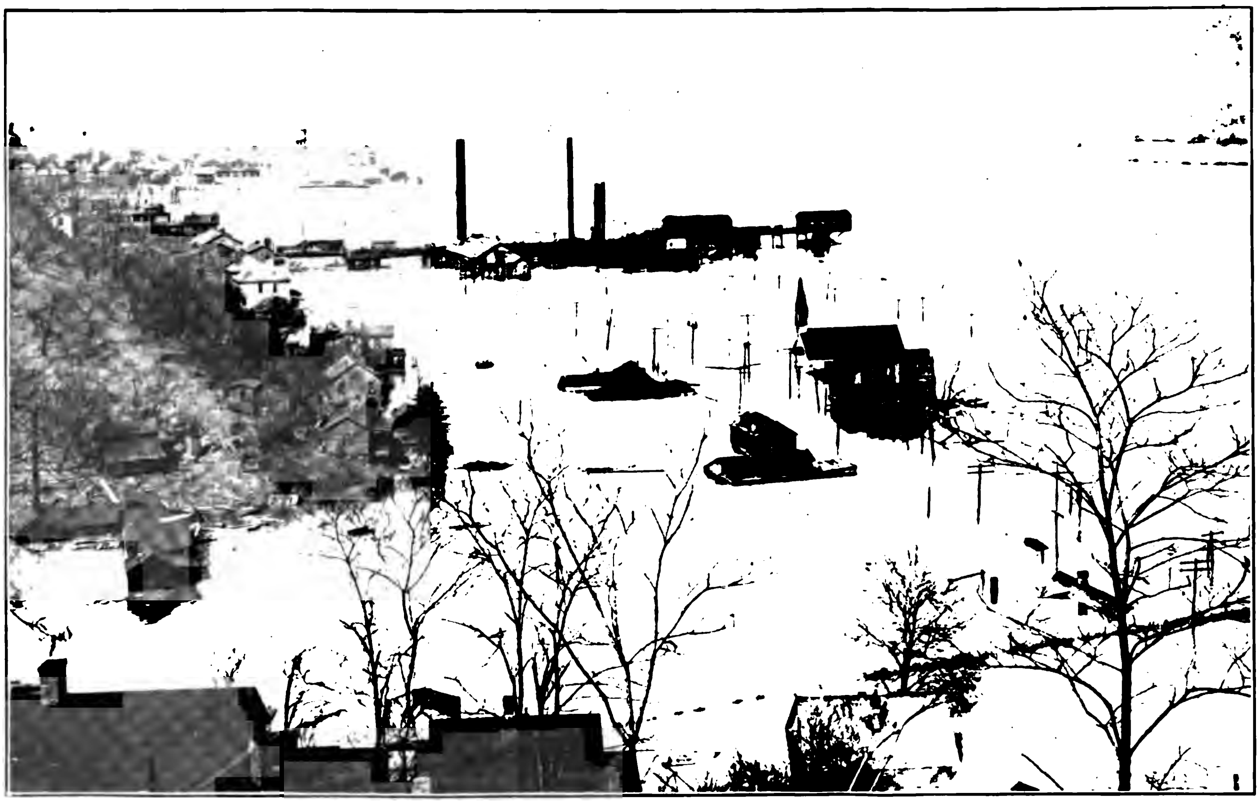
Steubenville, Ohio. March 28, 1913.

Cleveland & Pittsburgh Division at Pope Tin Plate Mill; main tracks between telegraph pole line and hopper cars.



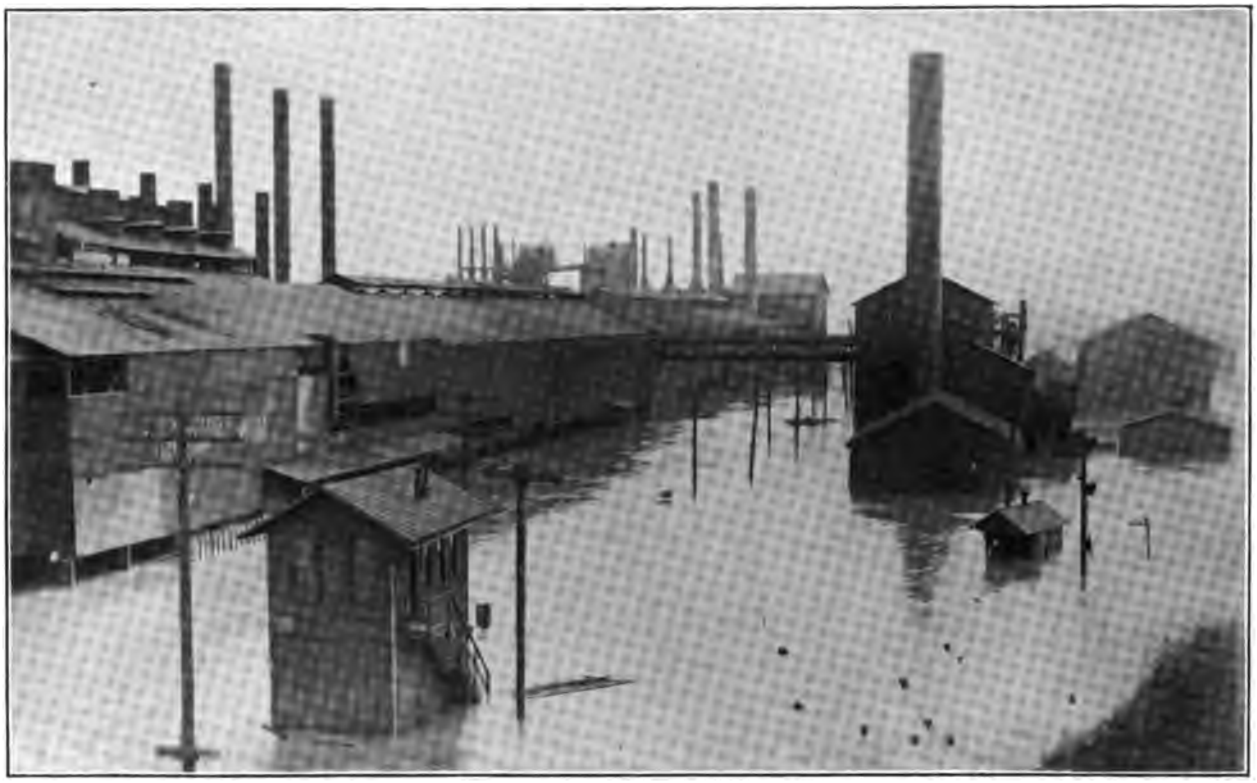
Wheeling, W. Va. March 28, 1913.

Water Street from Pennsylvania Lines Station.



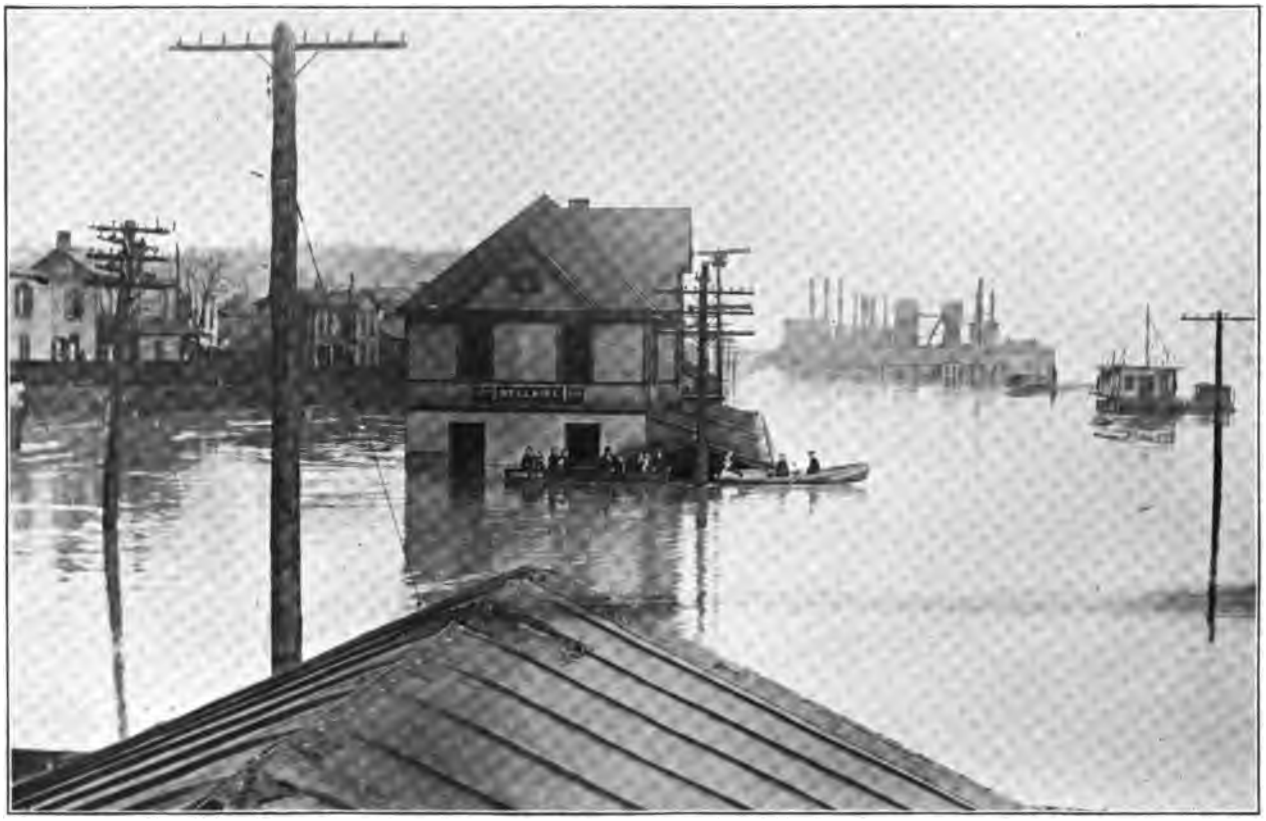
Bellaire, Ohio. March 28, 1913.

Ohio River about crest—had probably receded a foot or two.



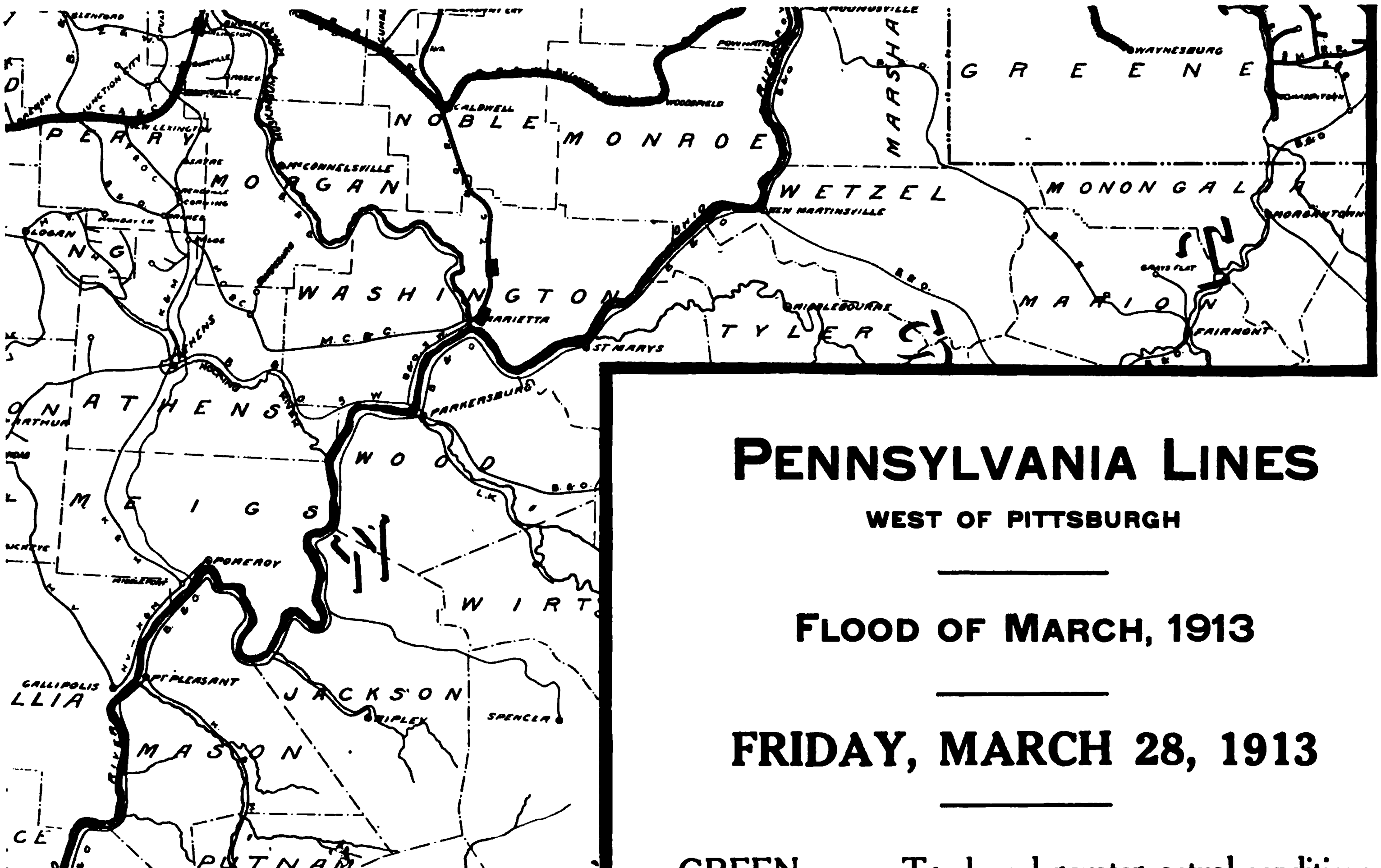
Bellaire, Ohio. March 28, 1913.

Tower and target at B. & O. crossing in foreground. C. & P. Division tracks parallel telegraph pole line between buildings.



Bellaire, Ohio. March 28, 1913.

Westward end of Station, Carnegie Steel Plant in distance.



PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

FRIDAY, MARCH 28, 1913

GREEN—	Track under water, actual conditions unknown.
RED—	Track, Roadway or Bridges damaged beyond use.
YELLOW—	Road over which passenger trains were operated.

CHAPTER 6.

SATURDAY, MARCH 29, 1913.

This, the fifth day of the flood, was the first in which full knowledge of the extent of the catastrophe could be had. The telegraph department had succeeded in restoring one or more wires over nearly all the system, excepting through such places as Zanesville and Delaware and a few other points where there was nothing to work with, and it was still necessary on account of the broken lines to send messages in a very roundabout way. Engineers had been over nearly all the damaged track and bridges and made provisional estimates of the material and labor necessary to put them in shape for service.

"Taking stock" of the general situation, it was found that most of the minor damage had been so repaired that the forces could be concentrated at the points of greatest damage, namely:

On the Northwest System:

The eleven miles from Loudonville to Lucas, where five bridges were either destroyed or badly damaged.

On the Southwest System:

The thirty-six miles from Port Washington to Trinway, where three bridges were destroyed, most of the track and much of the roadbed was so damaged as to amount practically to destruction.

A mile or more of elevated track with several street bridges in West Columbus completely destroyed.

The bridge over the Scioto River at Marblecliff badly damaged and out of service.

The approaches to the Miami River bridge at Piqua washed out.

The twenty-nine miles from Roxanna, Ohio, to Foster, where thirty-three washouts, from 150 feet to 8,000 feet long each, were to be filled.

The twenty-seven miles from Eaton, Ohio, to Hamilton, where four bridges were practically destroyed, and numerous washouts were to be filled.

The eighteen miles from Columbus, Ind., to Seymour, where there were numerous washouts and one bridge down at one end.

The bridge over White River at Muncie, Ind., destroyed.

On the Central System:

The bridge at Gambier, over the Kokosing River, destroyed, and approaches to the Mohican River bridge at Brink Haven washed out.

The Dresden Branch, 33 miles long, on which much of the track, particulary the bridge approaches, had been washed out.

The Walhonding Branch, 45 miles long, on which a trestle 1216 feet long was destroyed, four bridges were destroyed or damaged seriously, the approaches to nearly all bridges washed away, and numerous other pieces of track washed out.

The bridges over the Muskingum River at Ellis and Zanesville destroyed.

The approaches to the Scioto River bridge at Circleville washed out.

The twenty-three miles from Oldham to New Comerstown, Ohio, where numerous washouts were to be filled and the approaches to the Tuscarawas River bridge were washed out.

On the Vandalia Railroad:

The Wabash River had cut two new channels through the railway at Macksville, requiring trestling.

The Vincennes Division was washed out here and there for almost its entire length, with four bridges destroyed.

It was clear and cold all day and the water in all streams fell rapidly, excepting of course in the Ohio, which had begun to fall at Wheeling, but was still rising below that point. The water was still so high as to prevent starting repair work at many places. The Scioto River at Marblecliff was so swift that small riprap could not be dumped above the broken pier of Bridge 3. The telegraph line between Trinway and Adams Mills was still submerged, and linemen in boats were engaged in clearing the wires of driftwood, dead animals, etc., as fast as they were exposed by the falling water.

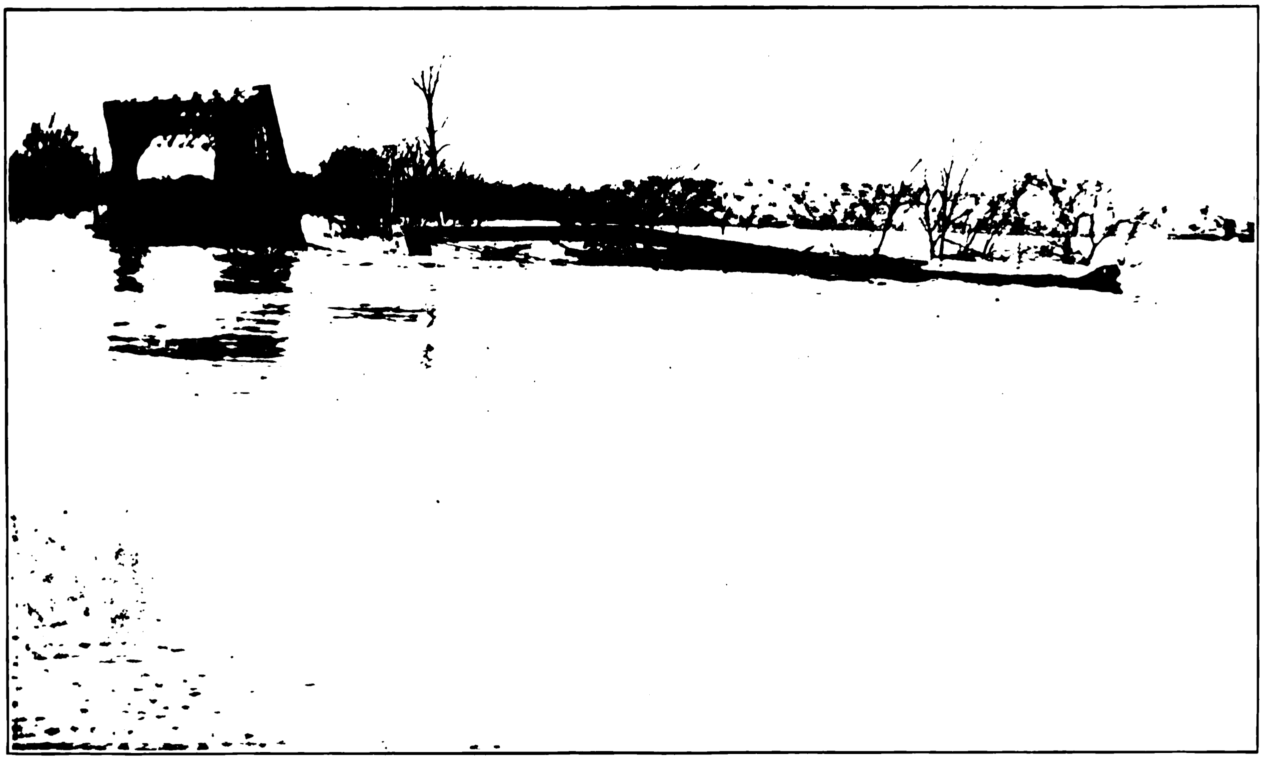
With the recession of water in the Wabash River at Logansport, it was found possible to re-establish passenger service between Chicago and Indianapolis via Richmond, and between Chicago and Piqua, Ohio.

By utilizing the two detour routes, over the Lake Shore from Cleveland to Clarke Jct., and over the Erie from Akron to Mansfield, passenger service between Chicago and Pittsburgh and points east was resumed in full, with the exception of Nos. 28 and 29.

Between Pittsburgh and Terre Haute, passenger service was resumed in part via Alliance, Hudson, Akron, Erie R. R. to Mansfield, Ft. Wayne, G. R. & I. Ry. to Richmond, and Indianapolis, at which point the Vandalia Railroad was opened in the afternoon.

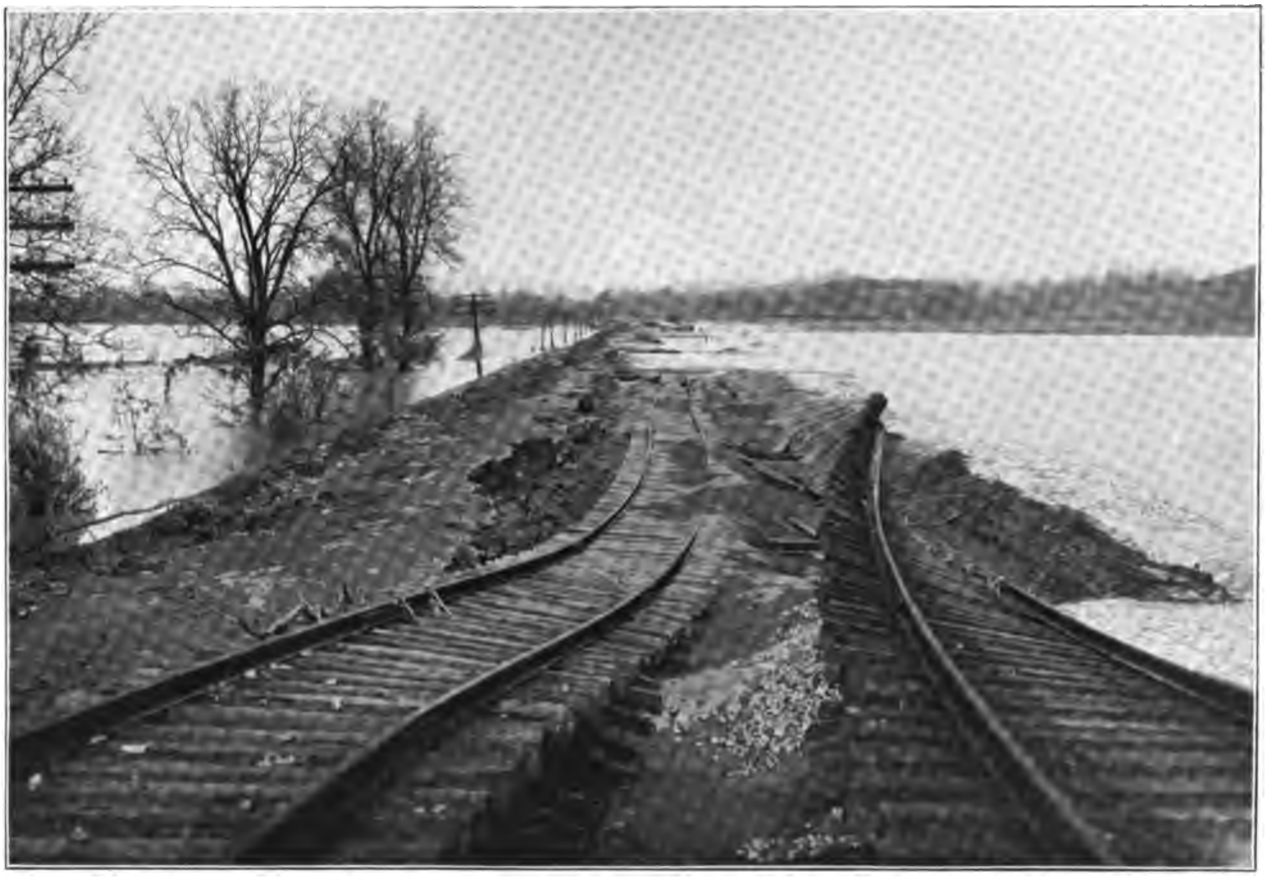
From Richmond to Miami City (West Dayton) relief supplies were handled without transfer, and arrangements were made to resume passenger service on the next morning (Sunday).

By transferring passengers around washout near Columbus, Ind., it was possible to take three or four hundred of them from Louisville to Indianapolis, using the B. & O. from Seymour to North Vernon.



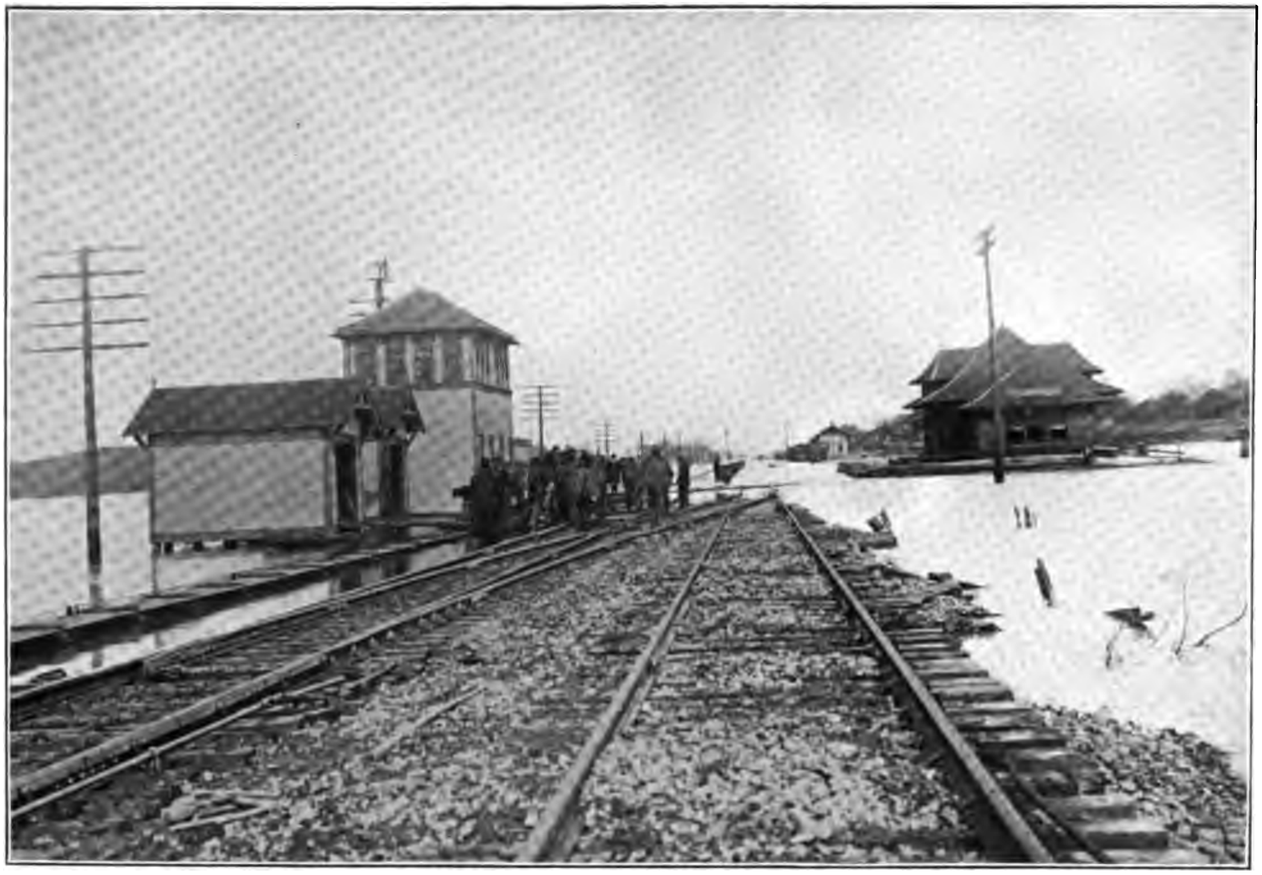
Coshocton, Ohio, west of March 29, 1913.

Bridge 100, Pittsburgh Division, over Muskingum River. View east from west bank of river, 11:00 a. m. Water had receded several feet. Two spans standing, two entirely destroyed.



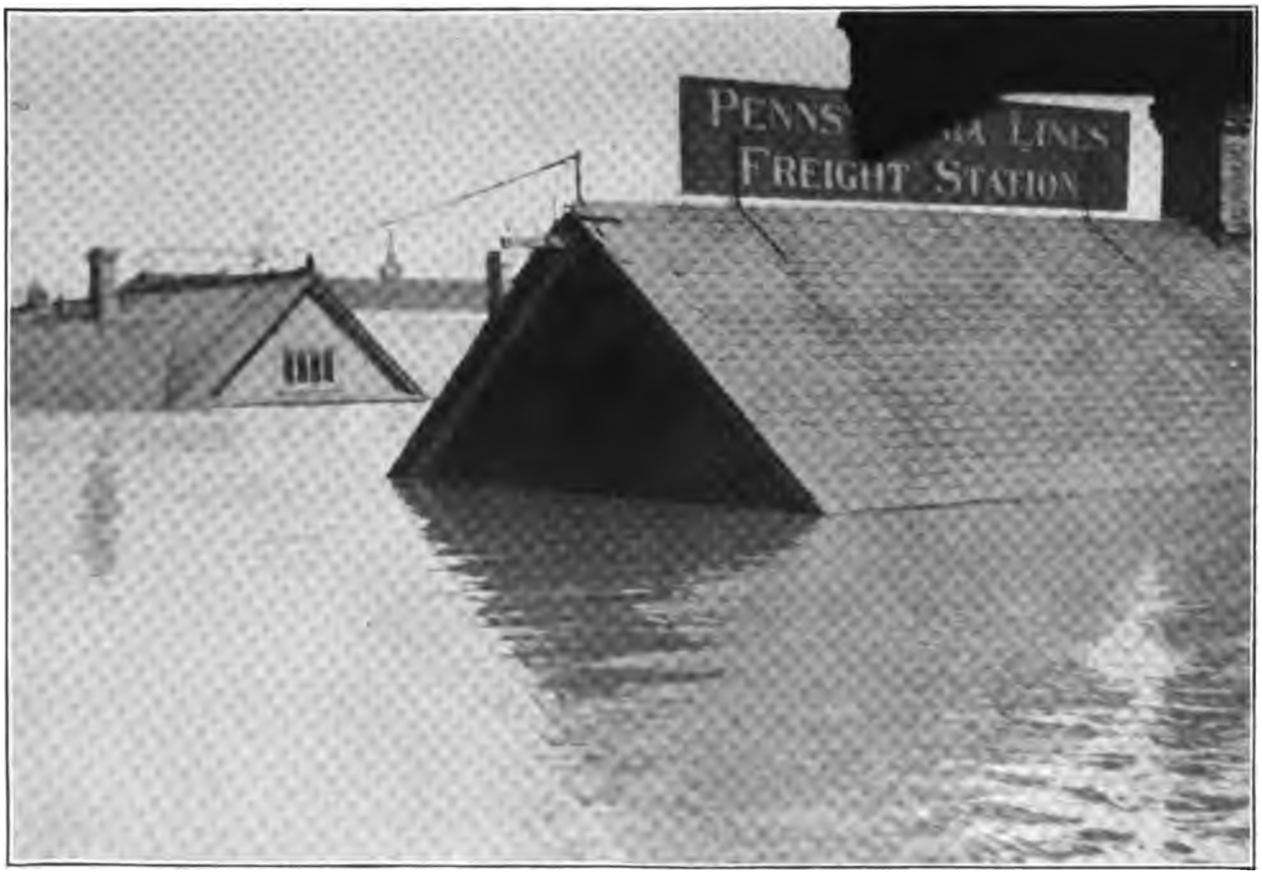
Coshocton, Ohio, west of. March 29, 1913.

View east, east of Bridge 100, showing roadbed destroyed for two thousand feet.



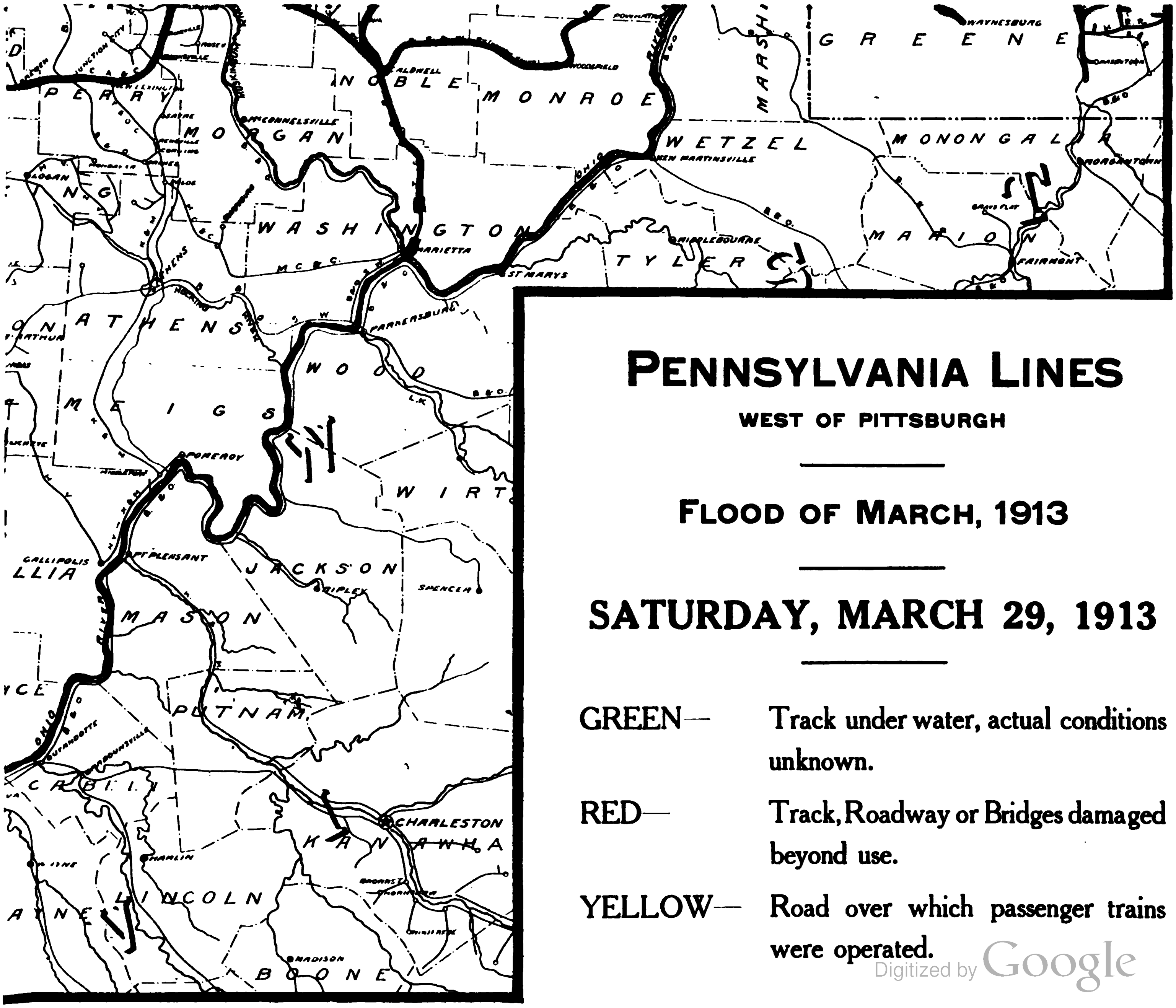
Trinway, Ohio. March 29, 1913.

Water had fallen 10 feet.



Marietta, Ohio. March 29, 1913.

Pennsylvania Lines Passenger Station at left, and Freight Station at right, when water was at highest.



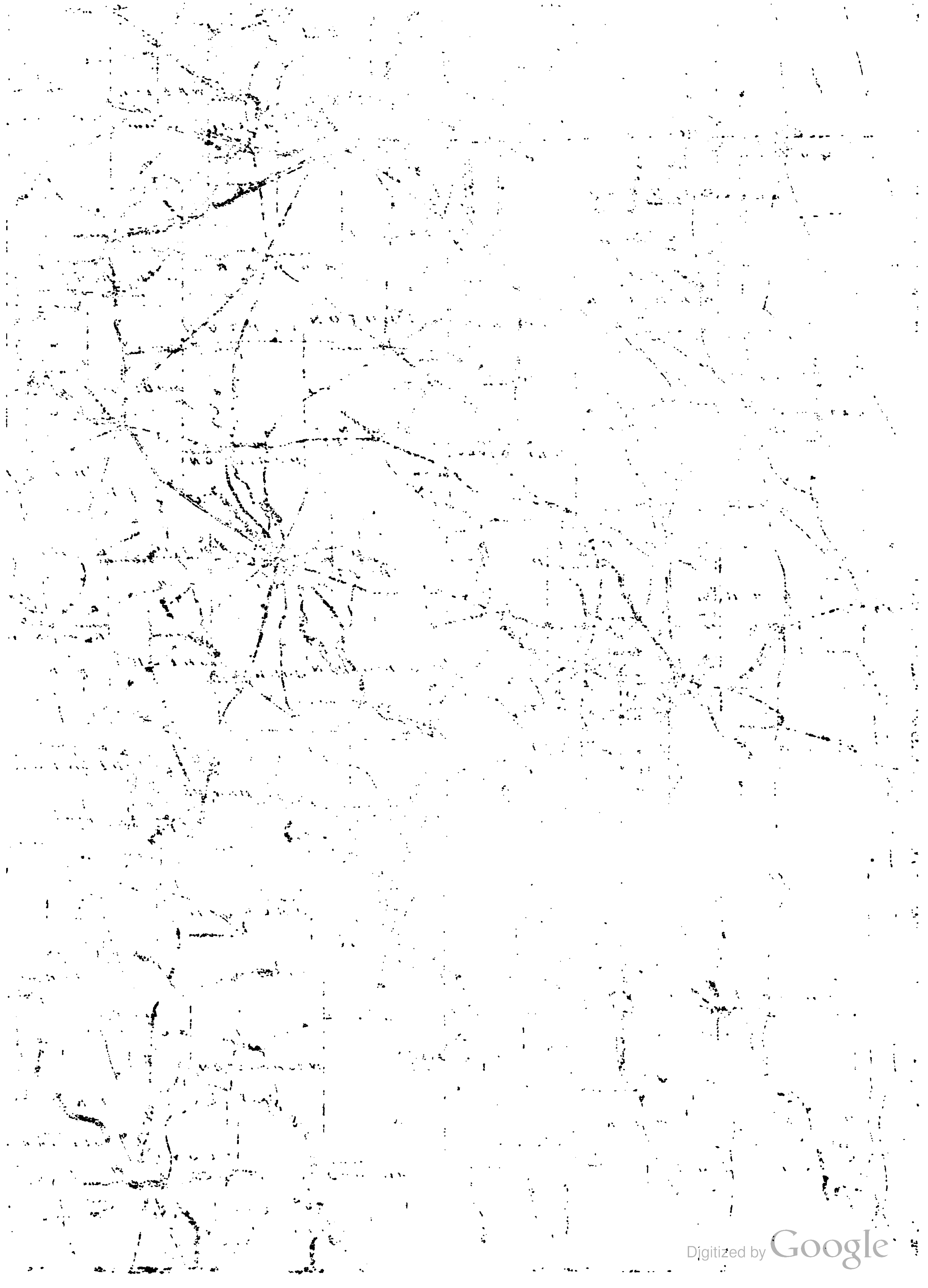
PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

SATURDAY, MARCH 29, 1913

GREEN—	Track under water, actual conditions unknown.
RED—	Track, Roadway or Bridges damaged beyond use.
YELLOW—	Road over which passenger trains were operated.



CHAPTER 7.

SUNDAY, MARCH 30, 1913.

Warmer, cloudy weather everywhere, threatening rain, brought gloomy forebodings to all, for in the last week of March it rains on the slightest provocation. It did not begin until evening, but during the night there was a general rainfall over Ohio and Indiana.

Rivers continued to fall, except the Ohio, which was still rising from Cincinnati west, but most of them were still high and swift, higher in fact than the usual flood stage.

Repair work continued unabated all day and all night, as usual.

By the opening of the Sandusky Branch through Delaware, an outlet was made for the passengers, mail and express marooned at Columbus. Those for the east were taken to Bucyrus; from there to Mansfield over the Ft. Wayne, to Akron over the Erie, and to Pittsburgh via Hudson and Alliance. Those for the west were taken from Bucyrus to Ft. Wayne over the Ft. Wayne route, from there to Richmond on the G. R. & I.; to Indianapolis on the Pan Handle, and to Terre Haute on the Vandalia.

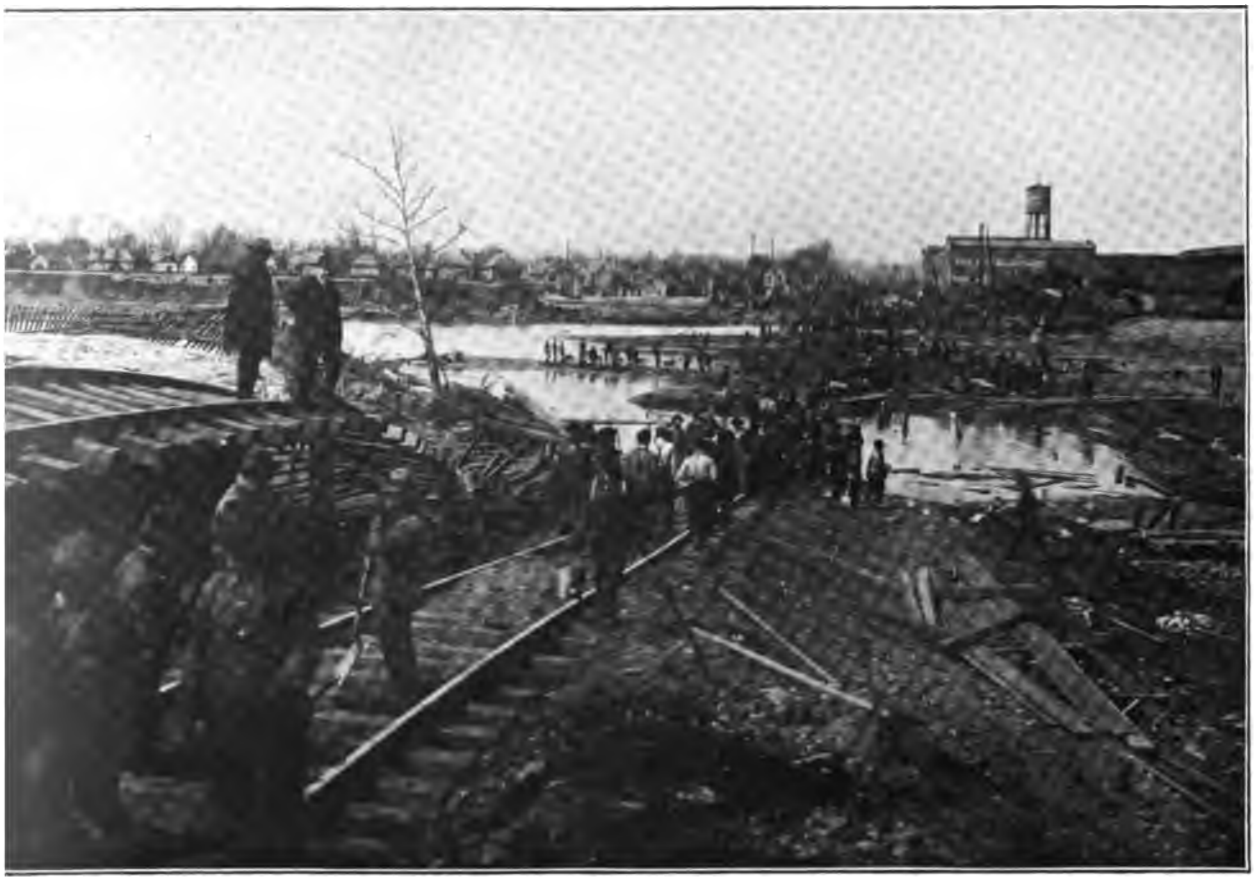
Passenger service between Pittsburgh and Chicago was maintained via both the Lake Shore and Erie detour routes. Louisville-Chicago passenger trains were enabled to run through by detouring over the B. & O. S. W. from Seymour to Mt. Vernon, using the Madison Branch to Columbus, Ind., thence to Indianapolis, to Richmond, to Logansport, and Chicago.

Through service on the Pan Handle from Chicago to Columbus, Ohio, was accomplished by transferring passengers, baggage, etc., at Piqua, over a foot bridge constructed over the washout, and at Marble Cliff over Bridge 3, on which temporary planking had been laid.

To provide a through route for the Southwest System to Pittsburgh, it was found that the quickest result could be obtained by opening up the C. A. & C. between Columbus and Orrville, and the Southwest System was asked to extend such aid as it could to this end.

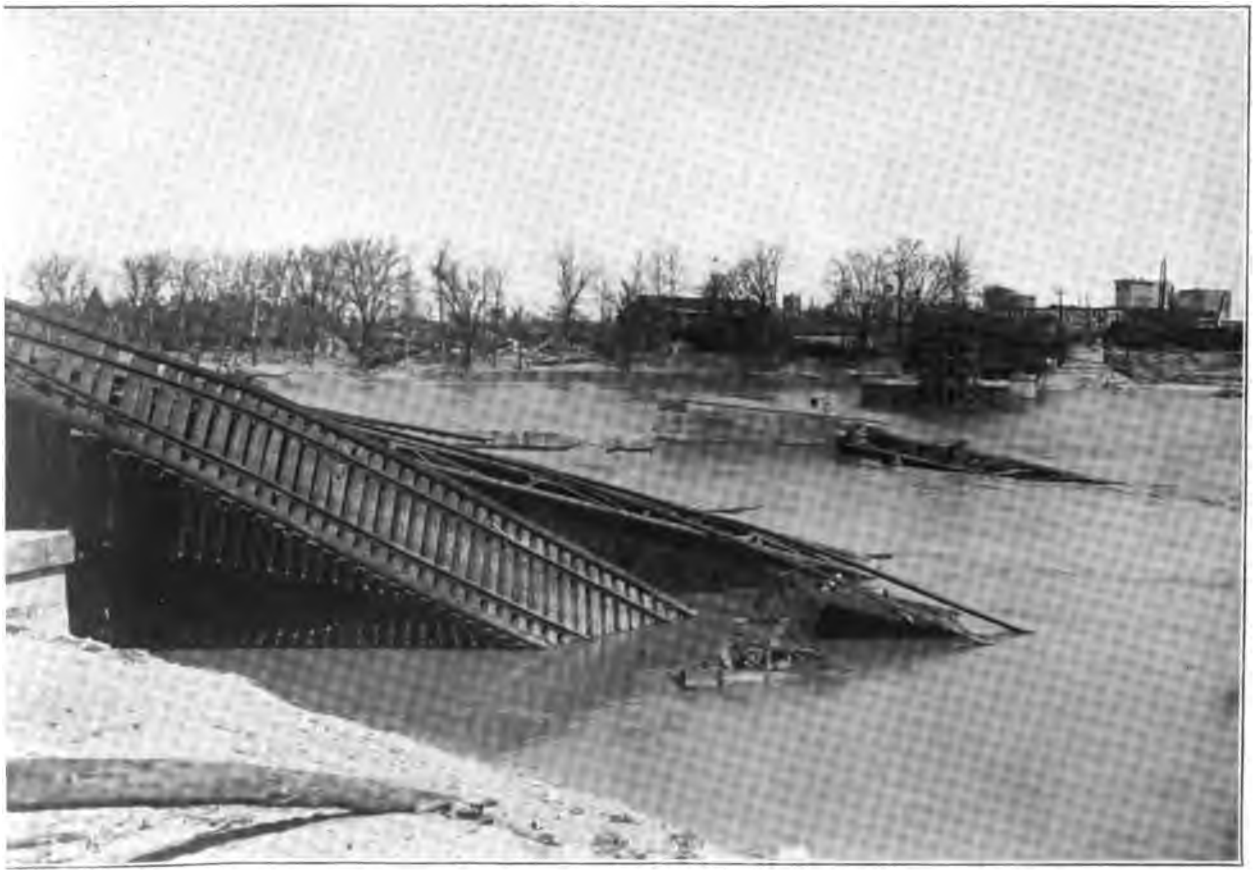
As some of the reconstruction gangs had ahead of them from one to several weeks work, it was arranged to institute a regular sanitary supervision of the camps, through the Medical Corps of the Voluntary Relief Department.

Six medical officers were detached from the regular service and put in charge of the work. A car was fitted up for each gang, equipped with medical and surgical supplies for the treatment of sick or injured workmen, and the men were instructed to report for attention when feeling the least indisposition or following the most trivial injury. They did this, and many cases of minor illness were treated immediately, avoiding what otherwise might, under the unusual conditions, have developed serious illness. Cuts, scratches and bruises were promptly dressed to guard against infection. More serious injuries were very few.



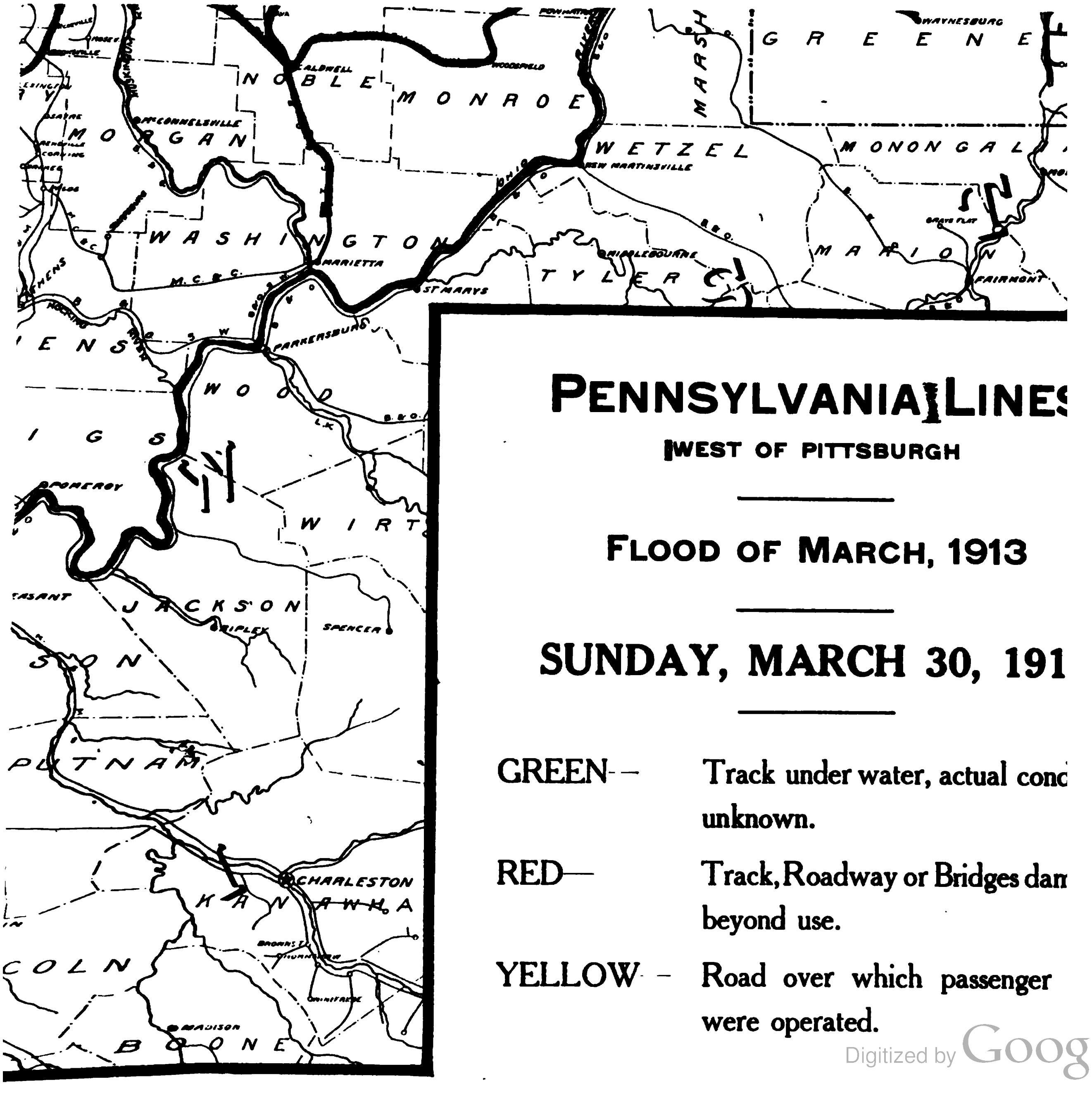
Vest Columbus, Ohio. March 30, 1913.

B. & O. R. R. Crossing, looking west. Material of former fill being reclaimed as much as possible.



ıyton, Ohio. March 30, 1913.

Dayton Union Bridge over Miami River, from west side, just after Big Four had begun construction of temporary trestle.



PENNSYLVANIA LINES
WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

SUNDAY, MARCH 30, 191

GREEN—	Track under water, actual conc unknown.
RED—	Track, Roadway or Bridges dan beyond use.
YELLOW—	Road over which passenger were operated.

CHAPTER 8.

MONDAY, MARCH 31, 1913.

The rain during the night did no particular damage, but kept the streams still at flood stage and more or less retarded repair work at a few points.

Enough of the road had been opened up to make it possible to move passengers and freight to almost any point in Ohio and Indiana, by utilizing many very roundabout routes. Attention was therefore centered for a time on working off the accumulation of freight, mail and express held at Pittsburgh and Conway for movement west and at Chicago and Ft. Wayne for movement east. The detour routes via the Lake Shore and Erie roads were utilized to the extent of their capacity for through business, and as new business was not beginning to offer in large quantities, owing to the embargoes placed early the previous week, the old freight was worked off within a few days, excepting of course that there were certain sections of line to or from which it was impossible to handle anything.

For the information of agents in disposing of freight on hand where the flood caught t, the following instructions were today sent to all agents:

> "Reports indicate that, in addition to heavy property damage sustained by our lines from floods at various points, freight **in transit,** which it was impossible to protect, has been damaged. Such freight should be forwarded to destination as promptly as possible. Every effort should be made to effect prompt delivery of all freight to consignees that they may take care of their property.
>
> "**Perishable** freight **in transit,** unfit for transportation, should be disposed of and full record made and reported to Freight Claim Agent."

Through passenger service between Pittsburgh and Chicago continued to be handled a the two detour routes, over the Lake Shore and Erie roads. Between Pittsburgh d Columbus via the Erie detour route to Mansfield and from Bucyrus south over e Sandusky Branch. Between Pittsburgh and Terre Haute, Ind., and Pan Handle ints from Richmond west via the Erie detour route, the Ft. Wayne route to Ft. ayne, and the G. R. & I. Ry. to Richmond. Route of the Chicago-Louisville ins continued as before, via Richmond, with detour from Seymour to North Vernon er the B. & O. S. W.

Local passenger service and local freight service were performed over all lines that re open for trains. To provide passenger service from Chicago to Columus, Ohio, hout transferring at Piqua and Marble Cliff, it was arranged to run two trains each y a day between these points via the Ft. Wayne route to Bucyrus and the Sandusky nch.

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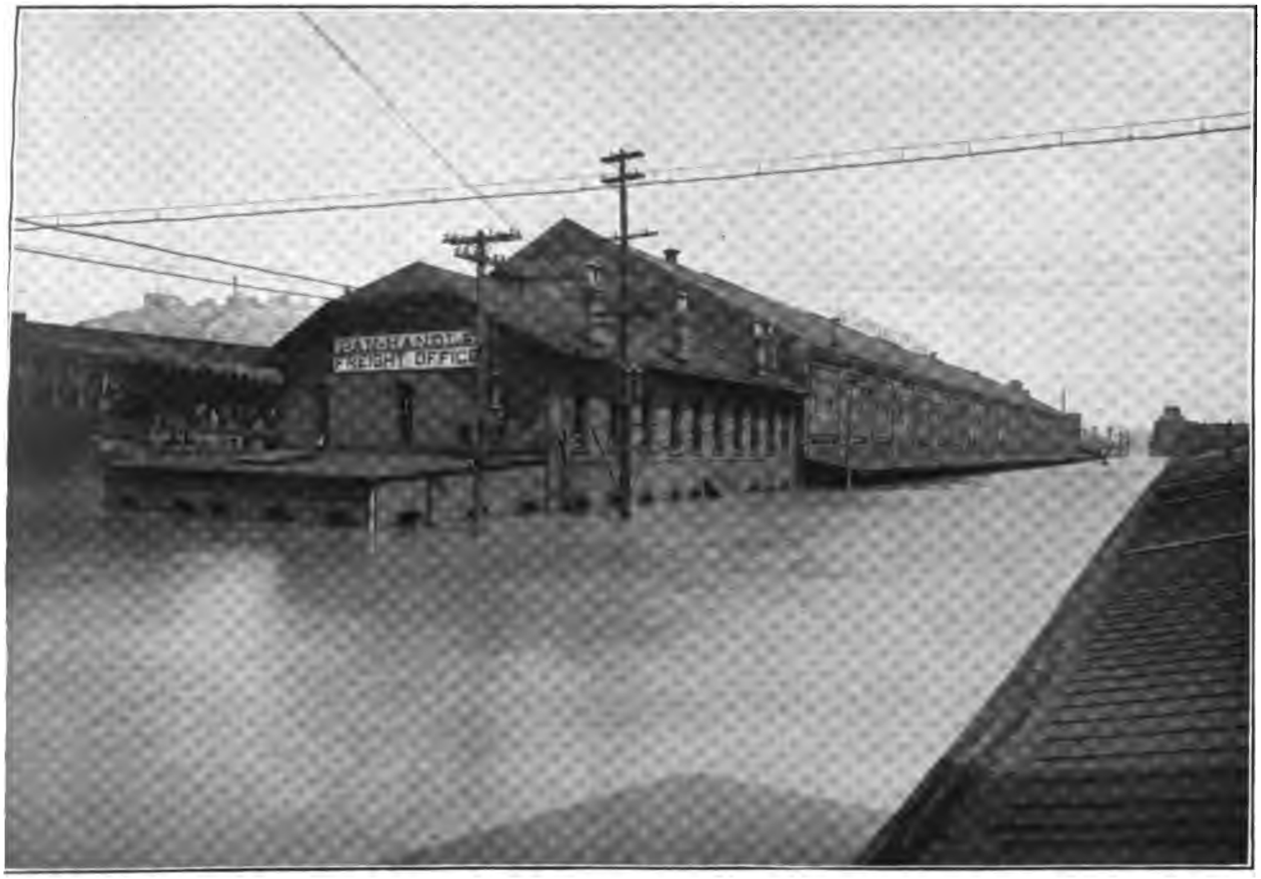
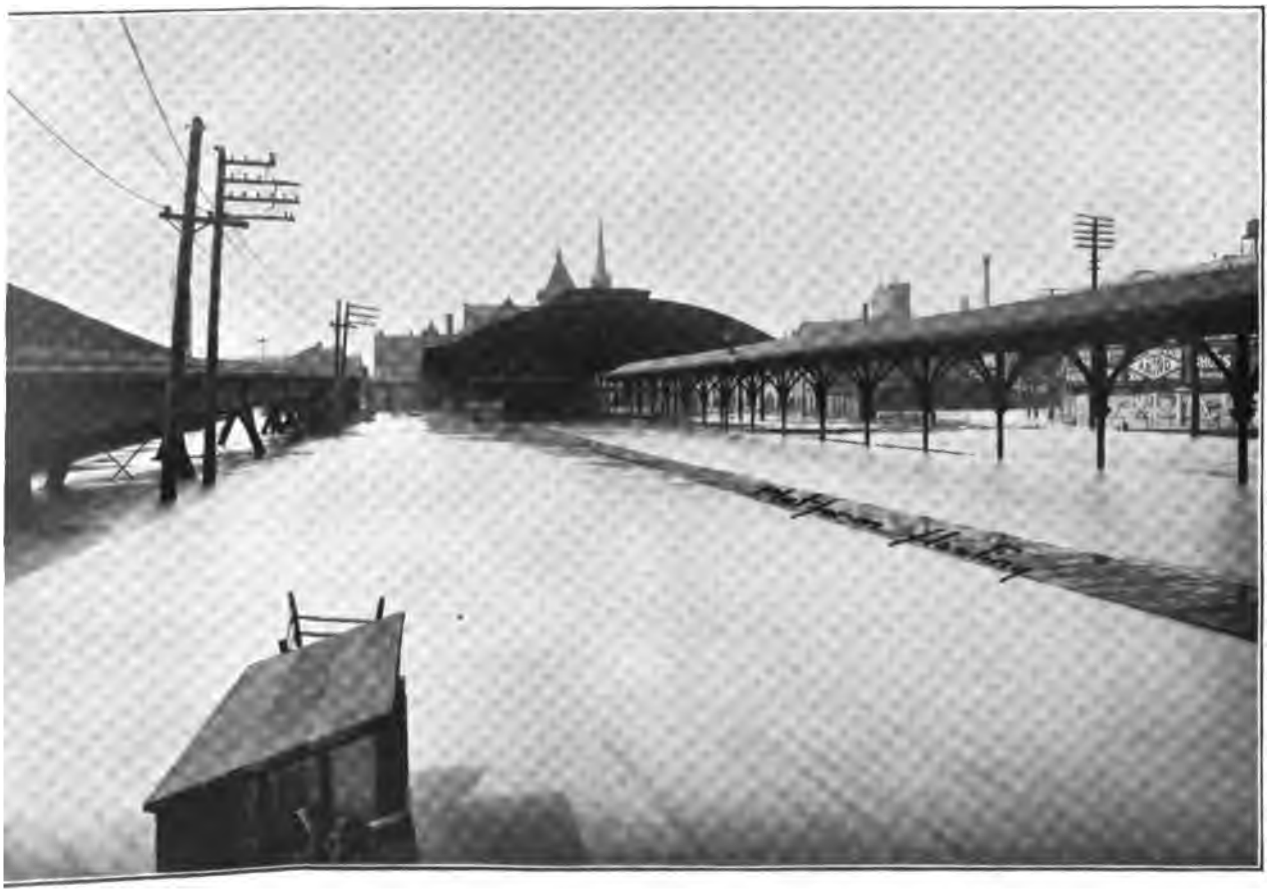


Cincinnati, Ohio. March 31, 1913.
Pennsylvania Lines Freight House, east of L. & N. bridge approach, at crest of flood in Ohio River.



ncinnati, Ohio. March 31, 1913.
Rear of Union Station when water was about at the highest in the Ohio. Platform in foreground is floating.

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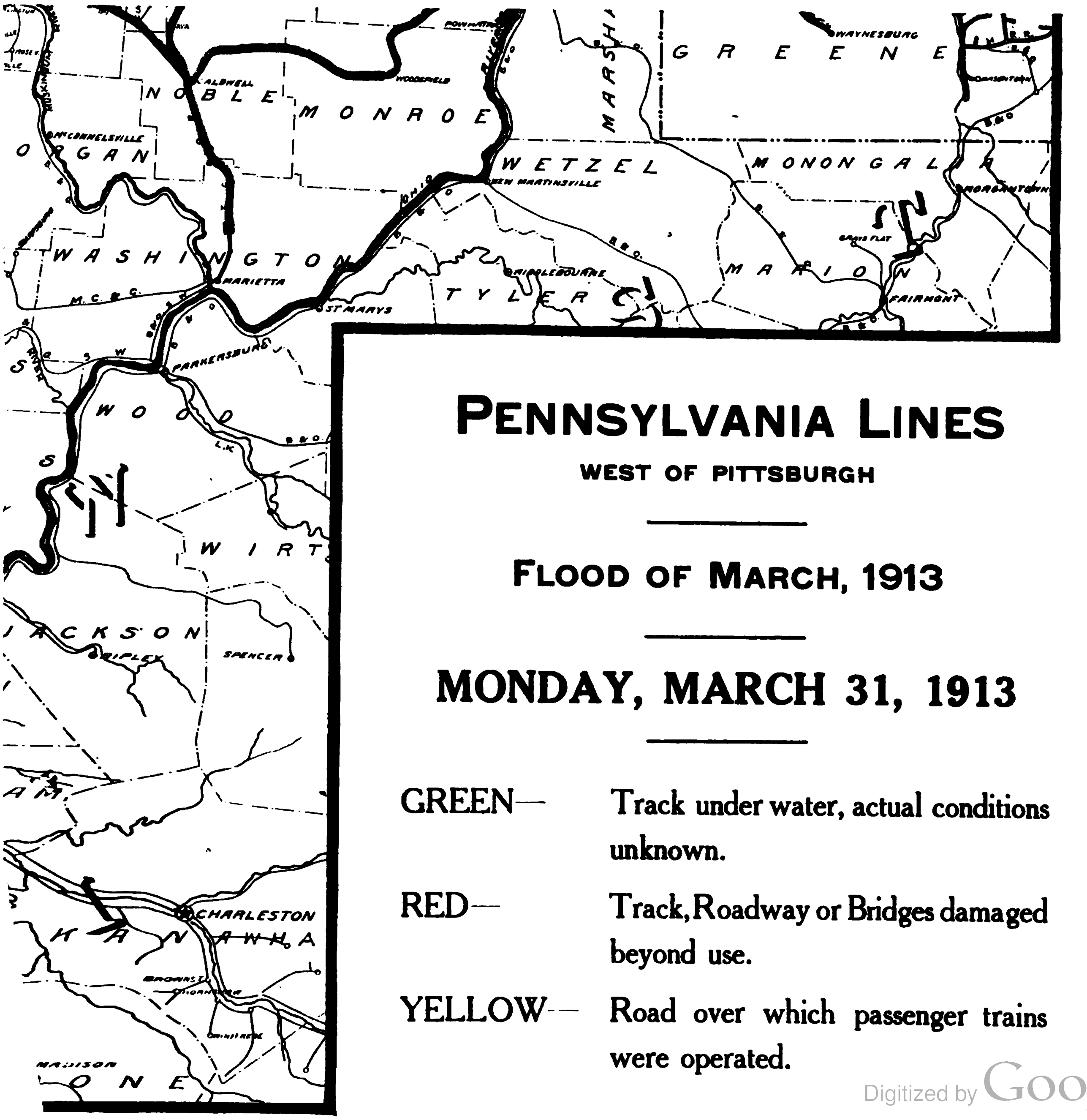

PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

MONDAY, MARCH 31, 1913

GREEN—	Track under water, actual conditions unknown.
RED—	Track, Roadway or Bridges damaged beyond use.
YELLOW—	Road over which passenger trains were operated.

CHAPTER 9.

TUESDAY, APRIL 1, 1913.

One week having now elapsed since the advent of the flood, and the railroad being yet broken in several places, a forecast as to when service could be restored over the several breaks was attempted. It proved later to be too optimistic as a whole, for at most places unforeseen difficulties were encountered, but the prospect at this time was that the lines would be restored to service as follows:

Eastern Division,	Loudonville to Lucas,	Wednesday night, April 2.
Pittsburgh Division,	Trinway to Coshocton,	April 10th.
Akron Division,	Millersburg to Mt. Vernon,	Thursday noon, April 3.
Indianapolis Division,	W. Columbus and Piqua,	Wednesday night, April 2.
Cincinnati Division,	W. Columbus,	Wednesday night, April 2.
" "	Dayton Union Bridge,	April 6.
" "	Cincinnati to Xenia,	Thursday, April 3.
Richmond Division,	Camden to Rendcomb Jct.,	April 11.
Louisville Division,	Columbus to Seymour,	April 7.
" "	L. E. & W. Indpls. to Kokomo,	Wednesday, April 2.
Marietta Division,	New Comerstown,	Friday, April 4.
" "	Into Marietta,	No estimate.
Zanesville Division,	Putnam to Morrow,	Thursday night, April 3.
" "	Zanesville and Ellis,	No estimate.
Vandalia Line,	Macksville, Ind.,	Wednesday night, April 2
" "	Indianapolis to Vincennes,	April 5th.
Walhonding Branch,	Coshocton to Loudonville,	No estimate.
Dresden Branch,	Killbuck to Trinway,	No estimate.
Cambridge City Branch,	Shelbyville to Columbus,	Wednesday night, April 2.

The water had receded at all points except Cincinnati, Madison and Louisville, ere the crest of the flood in the Ohio was now passing.

Telegraph facilities had been restored over the whole line except through Zanesville d Dayton, on the main lines, and the New Cumberland, Walhonding and Dresden nches.

Passenger service between Pittsburgh and Chicago continued to be handled by the detour routes,—the Lake Shore and Erie roads; between Pittsburgh and Terre Haute, the Erie detour to Fort Wayne, the G. R. & I. to Richmond and usual route west n there. Two trains each way between Columbus, Ohio, and Chicago were handled the Sandusky Branch to Bucyrus, and the Ft. Wayne road to Chicago. Chicago-isville trains were run via Richmond and detoured via the B. & O. S. W. from Seymour orth Vernon. Local service was performed wherever the line was open.

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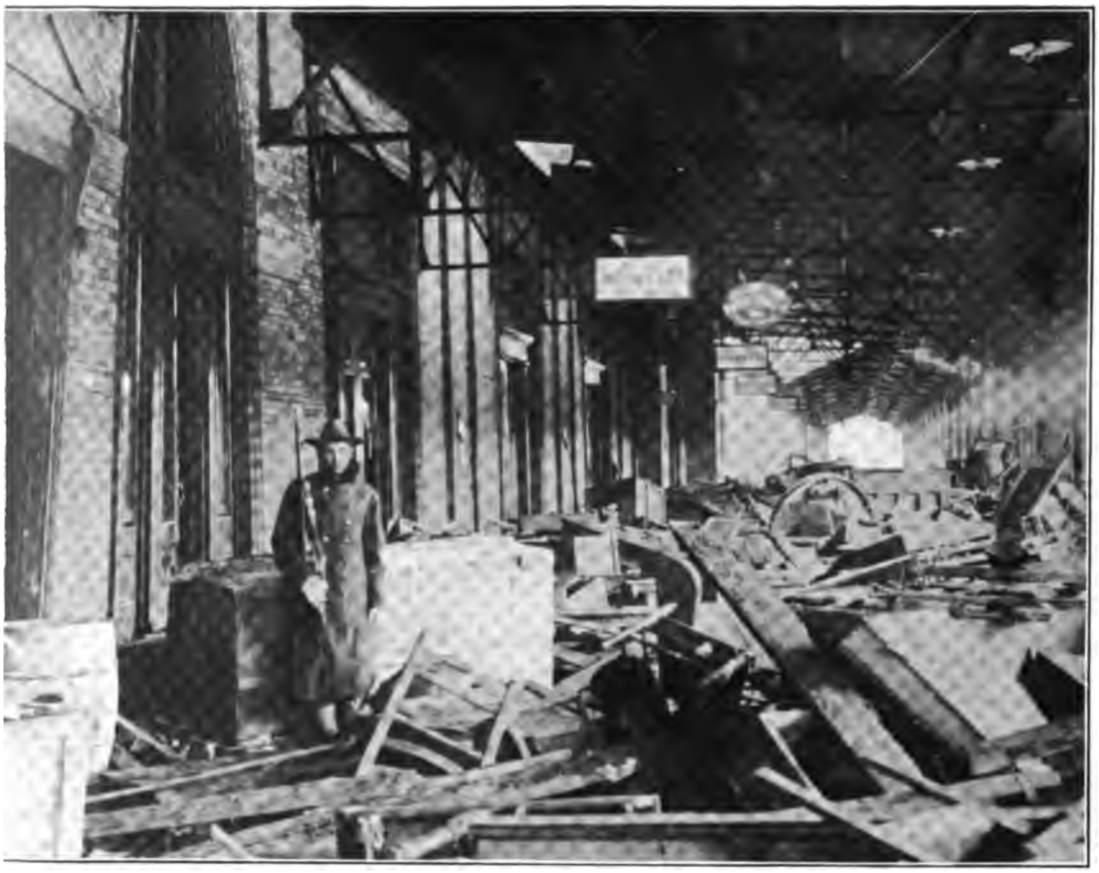
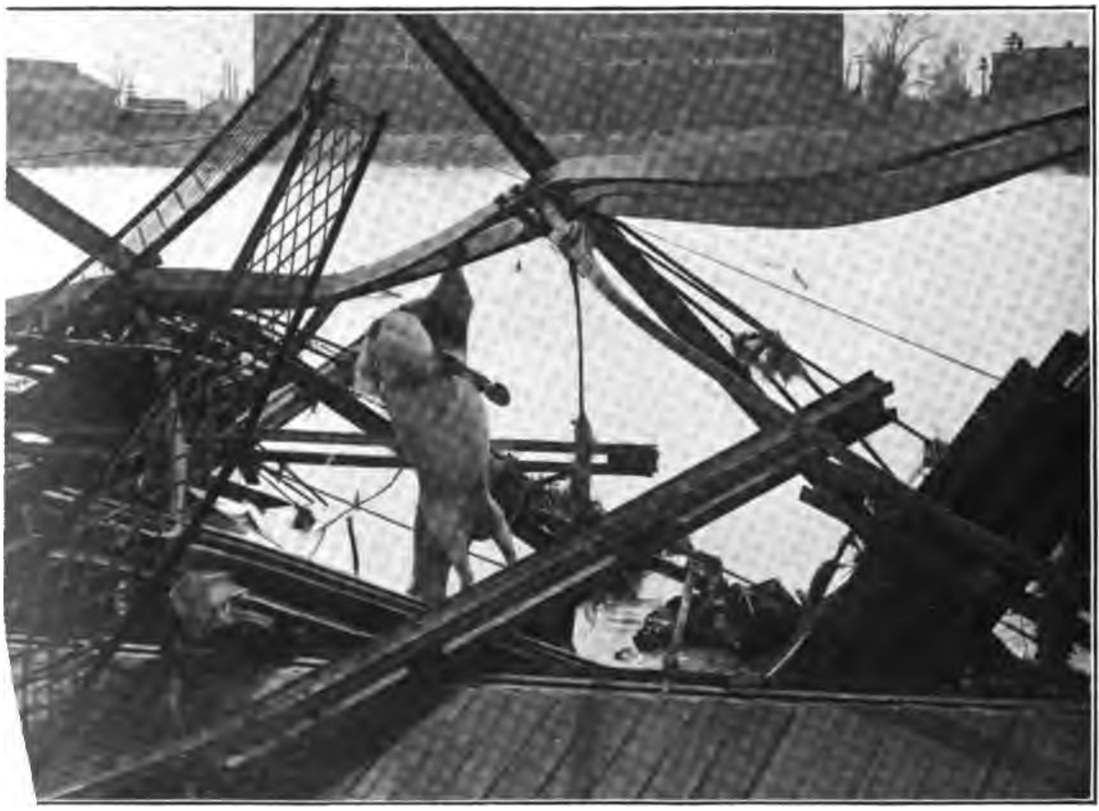


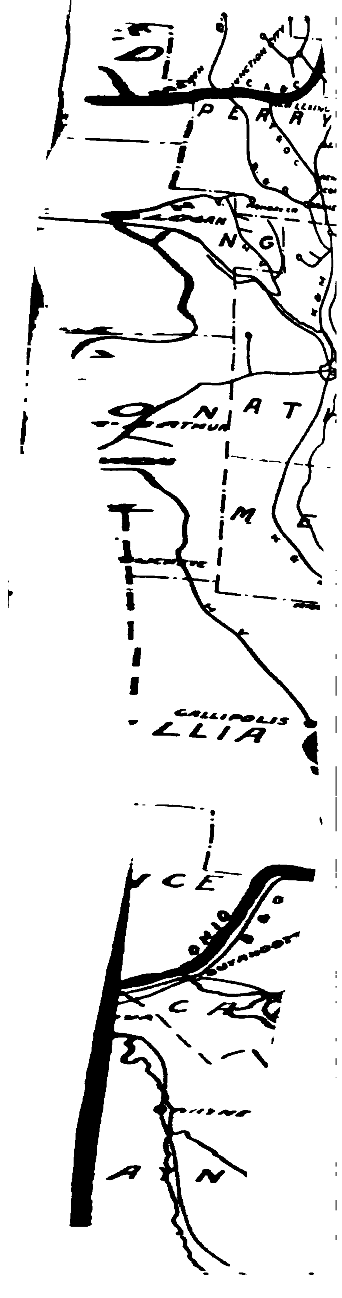
hio. April 1, 1913.

Concourse of Dayton Union Passenger Station after water went down.



April 1, 1913.

Fifth Street Bridge—first bridge above Dayton Union Bridge.
1,400 horses were drowned in Dayton.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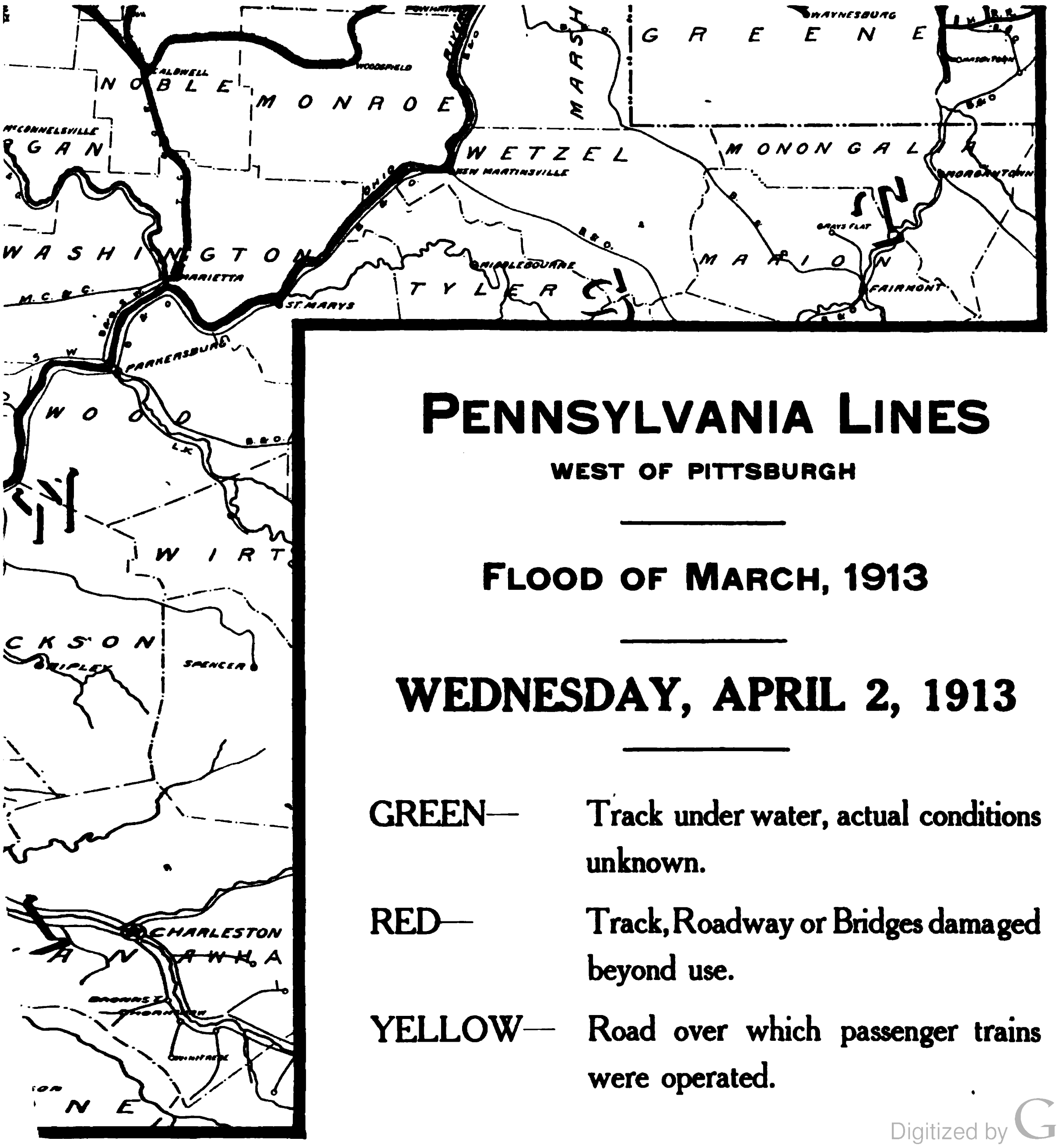

PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

WEDNESDAY, APRIL 2, 1913

GREEN— Track under water, actual conditions unknown.

RED— Track, Roadway or Bridges damaged beyond use.

YELLOW— Road over which passenger trains were operated.

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CHAPTER 11.

APRIL 3, 4, and 5, 1913.

On Thursday, the third, at 11:15 A. M. the main line of the Ft. Wayne road was ed for traffic, with one track, the first train over being No. 6, ten days having sed since the line was broken. With the opening of this line, full passenger service een Pittsburgh and Chicago was resumed via the Ft. Wayne road, putting an (temporarily, however) to the detour service via the Lake Shore and Erie roads.

The river at Cincinnati had gone down enough to permit clearing up the passenger on and yard. At Louisville, the New Albany Branch fill was not yet out of danger, he water had begun to fall.

The Marietta Division Bridge over the Tuscarawas River at New Comerstown put in service in the afternoon, opening the main line of that Division throughout.

Freight traffic for points on the Vandalia from Terre Haute west was handled via mbia City on the Ft. Wayne road and between that point and Terre Haute on the alia line.

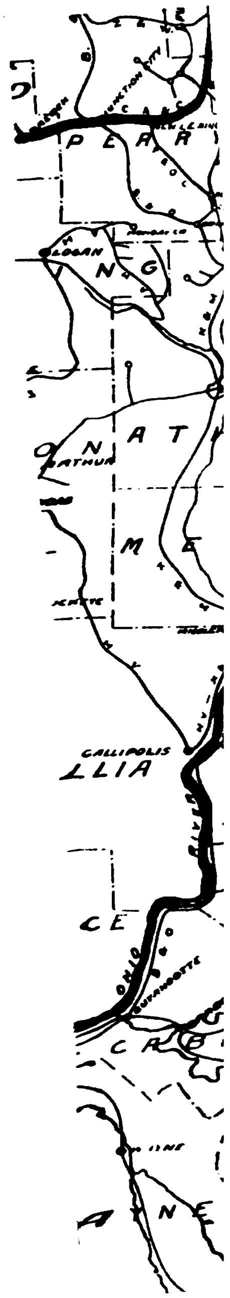
All day Thursday it rained through Central and Western Ohio and Eastern Indiana about the belt of the previous greatest rainfall, and on Thursday night it rained hard at many places for several hours. This brought the streams up again rapidly greatly retarded repair work.

On Friday morning, about five o'clock, one abutment of Eastern Division bridge 144 over Black Fork, just west of Coulter, Ohio, sank, again interrupting service he Ft. Wayne road until it could be repaired, which took twenty-four hours. As ngements had been made for full service, the trains were allowed to come through, again the two detour routes had to be resorted to until the morning of the 5th, when were permanently discontinued.

The Indianapolis Division bridge over the East Fork of the White River, west of Paris, Ohio, was also again put out of service by the undermining of the pier and washing away of the timber bents which had been constructed to support the steel . This made it necessary to send all through business by the G. R. & I. route Ft. Wayne for about twenty-four hours.

On the afternoon of Friday, April 4th, the Akron Division from Columbus to Orrville opened for service. This provided a much shorter detour route for Pan Handle ness between Columbus and Pittsburgh, although it was a very inadequate one, g a single track road with many slow orders. It was at once arranged to resume passenger service. It was later found necessary to take off Nos. 30 and 31 for a time, otherwise full passenger service between Pittsburgh and St. Louis was re-established he 4th, all tickets being sold subject to delay, however.

In the evening of the fourth, the Vincennes Division of the Vandalia was opened discontinuing a detour from Greencastle to Gosport Junction, over the C. I. & L., h had been used for several days.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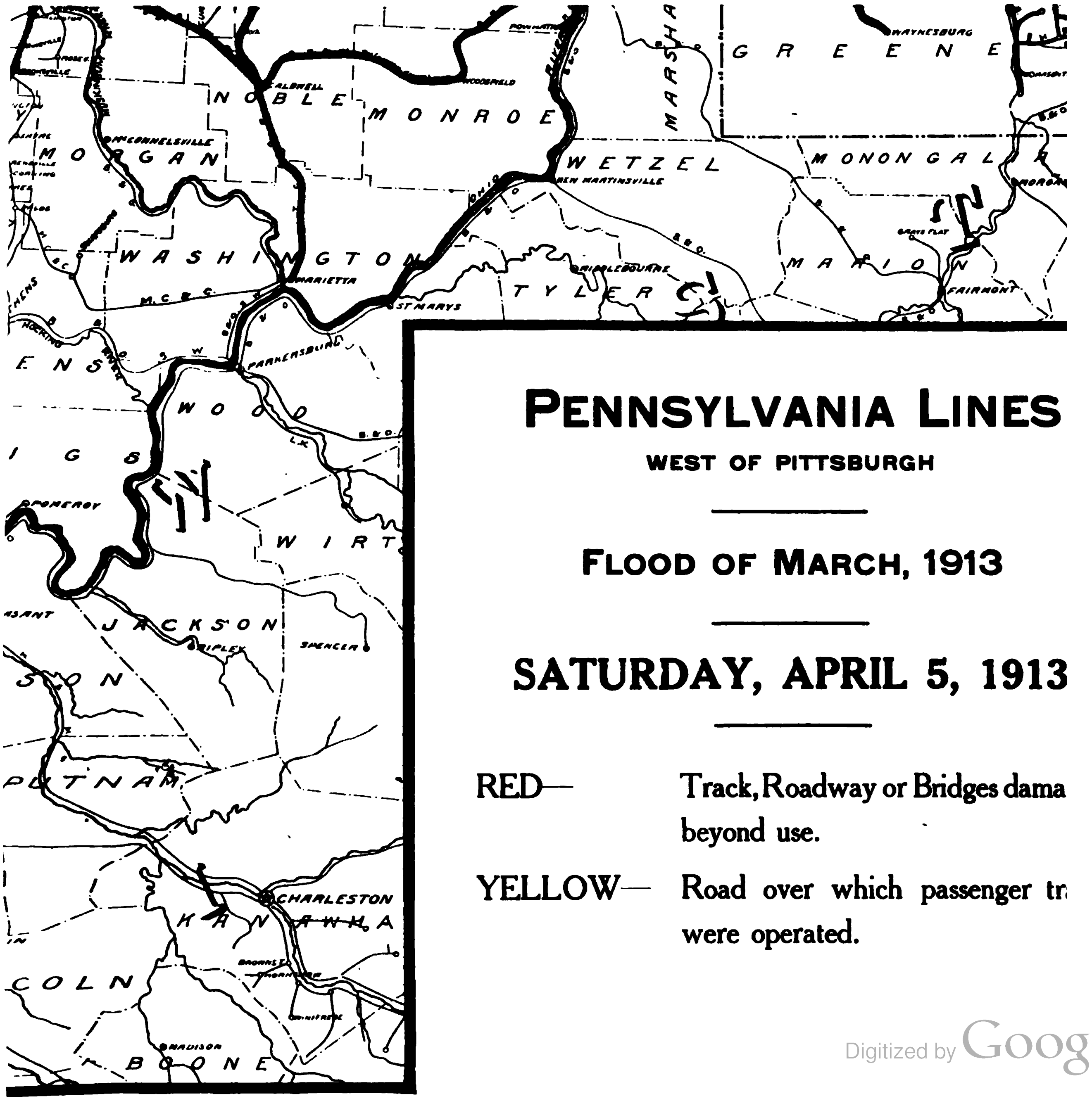

PENNSYLVANIA LINES

WEST OF PITTSBURGH

FLOOD OF MARCH, 1913

SATURDAY, APRIL 5, 1913

RED—	Track, Roadway or Bridges dama beyond use.
YELLOW—	Road over which passenger tr were operated.

CHAPTER 13.

SUBSEQUENT TO APRIL 12, 1913.

With the opening of the Pittsburgh Division on the morning of Sunday, April 3th, the main line routes were all in service, a few hours over eighteen days from the estruction of Bridge 100, and the closing of the routes between Pittsburgh and the est. The repair gangs were still engaged in providing second track through several laces where but one track had been rebuilt on the main lines, and in rebuilding the anesville Division bridges over the Muskingum at Ellis and Zanesville, and the alhonding and Dresden Branches in the valleys of the tributaries of the same stream.

On the 19th the derrick car at work on the Zanesville bridge was upset while handling girder, but it lodged against some flat cars on an adjacent siding and no particular mage was done. On the 1st of May, the pile driver working on the bridge at Ellis s precipitated into the river by the failure of one of the trestle bents it had just driven. place was taken by another driver.

On April 22d the Walhonding Branch of the Marietta Division, from Coshocton South Loudonville, was opened for service, and on Sunday the 27th the Dresden nch of the Akron Division, from Killbuck to Trinway, was restored to service.

On May 7th, the Muskingum River Bridge at Zanesville was reopened for service h a temporary structure, and on May 12th the Ellis Bridge was completed and put ervice. Forty-eight days after the flood the last link in the chain was closed and ice to all points on the Pennsylvania Lines West of Pittsburgh had been resumed ormal routes.

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CHAPTER 14.

EASTERN DIVISION.

The Eastern Division, from Alliance west, lies in the zone of greatest rainfall, and high water was experienced over the whole of the Division, the serious damage was confined to the district between Lakeville and Lucas, Ohio, where the tracks y the valleys of the Jerome Fork of the Mohican River and the Black Fork and ibutary, Rocky Fork. These streams, uniting, form the Mohican River, which, g with the Kokosing River, forms the headwaters of the Walhonding River, in turn, uniting with the Tuscarawas, forms the Muskingum; and wherever a rail- rossed or paralleled any of these streams it was practically destroyed.

n Monday evening, March 24th, word was received that one track had been under- at Bridge No. 149, at Lucas, a stone arch, one wing wall of which had been yed. Work trains and men were immediately sent there to replace the damaged Two hours later word was received that both tracks were washed out, twenty-five ep, a distance of 60 feet, at a point about a mile and a quarter east of Bridge No. 149. trains and a wreck train were started west to this point, but could get no nearer Wooster on account of the depth of water over the tracks west of there.

ssenger trains were therefore detoured over the Big Four to Columbus and the andle to Pittsburgh, and *vice versa*. Freight traffic was stopped. Additional came in rapidly of high water and serious damage at numbers of places, and all le men, material and supplies were assembled and started towards the scene age. Four pile drivers were secured, two of which were sent to each end of the d section of the road.

out 1:00 A. M. on the 25th, Bridge No. 146, a 79 foot deck truss bridge over Rocky ast of Lucas, was washed out; the masonry and superstructure being destroyed embankment on each side washed out, leaving a gap over three hundred feet

ittle later, one track was washed out at the west side of Bridge No. 147, a fifty ne arch over the same stream, about two miles further west. By dumping eats and other heavy stone into the hole, the water was prevented from under- he second track.

dge No. 145, a double span 65 foot deck girder bridge, was totally destroyed. dge is located just below where Rocky Fork empties into Black Fork, and their reams cut a hole about sixteen feet below the normal bed of the stream, under- he pier and both abutments of the bridge. On both sides of Bridge No. 144 ks were undermined, leaving holes twenty to thirty feet long back of the abut- At Bridge No. 141, a house lodged against the east abutment, causing an eddy ndermined the abutment and washed a hole sixty feet in length. This was a pan 96 foot deck girder bridge, and the east end of the east span settled when the

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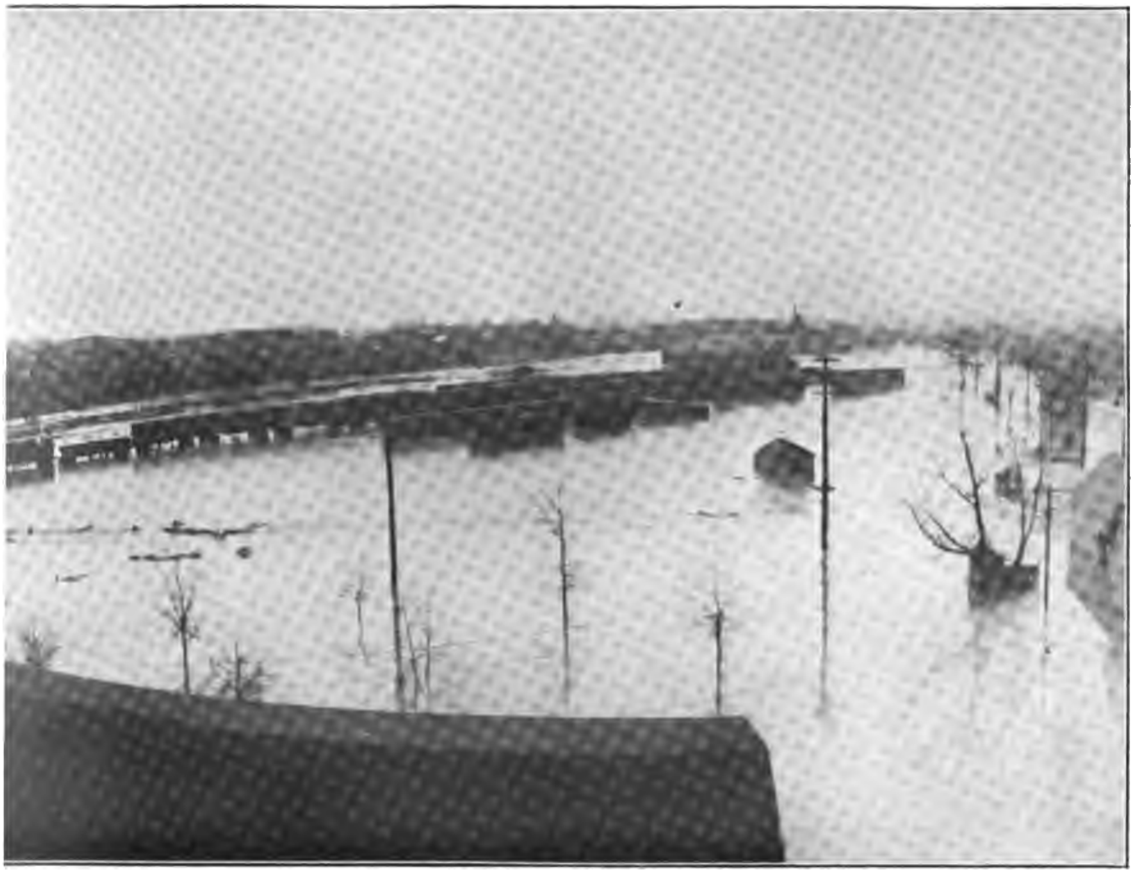
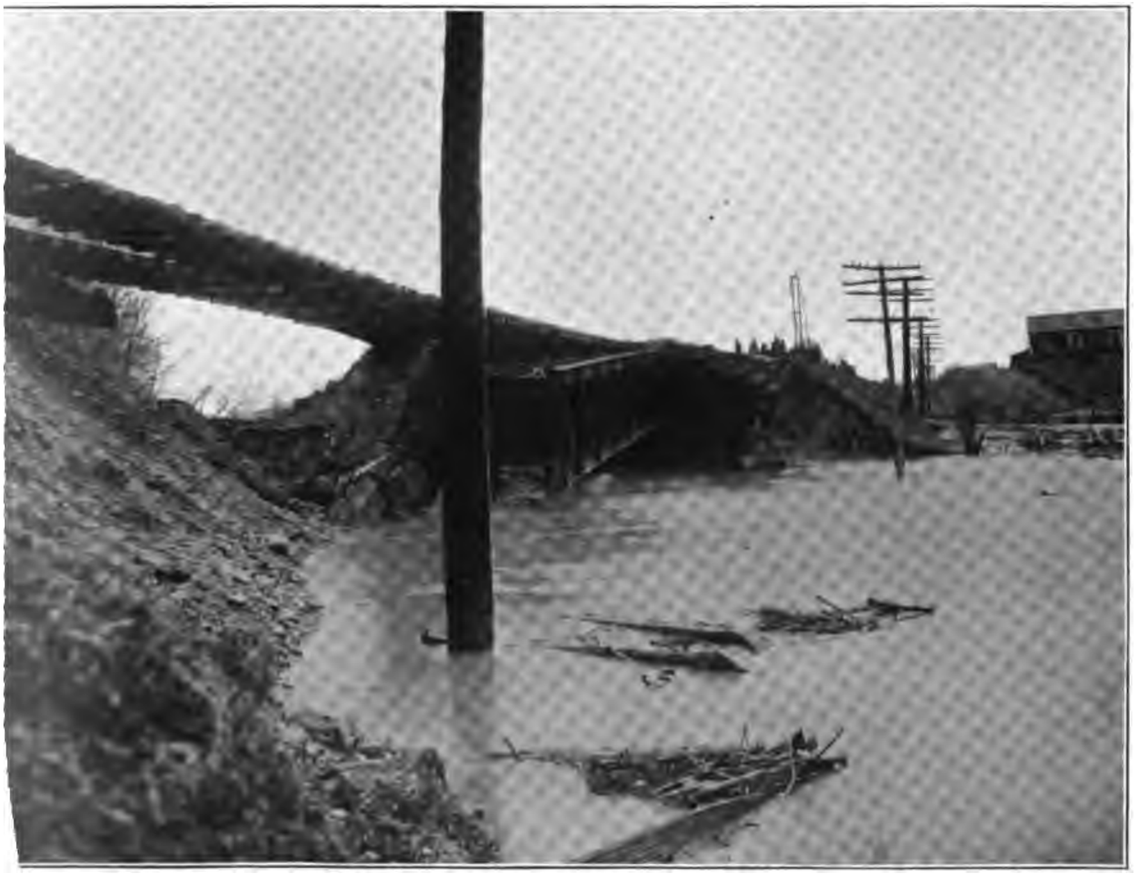


ld, Ohio. March 25, 1913.
tracks opposite Union Station building, which stands just at right of interlocking tower appearing at right of picture. These tracks are used for interchange with Erie R. R.



st of. March 26, 1913.
dge No. 146, over Rocky Fork, both abutments and about 125 feet of embankment approach destroyed.

abutment failed. Bridge No. 139, a double stone arch of 16 and 24 foot spans, was destroyed completely, and the twenty-five foot fill on each side washed out, leaving a gap seven hundred and fifty feet long.

All day long the water was too high to permit the work trains to get nearer the damaged bridge than Wooster. By daylight of the 26th, however, the water had gone down enough to start work westwardly through the district damaged by Killbuck Creek, between Wooster and Millbrook. At several points it was necessary to drive piling, as the current through the openings was too swift for anything else to hold against it.

From the west end, a driver started work at 10 A. M. (on the 26th) at the west end of Bridge No. 146, and made good headway during the day.

During the night the rain turned to sleet, and by daybreak it was very cold. The vork trains which had been working between Wooster and Millbrook proceeded to akeville, and during the day of the 27th, drove piling on each side of Bridge No. 132 nd repaired a gap of about 2,000 feet where the track was entirely washed out west f this bridge, and by evening were able to proceed to Bridge No. 136, where the railroad osses Jerome Fork. A large force of trackmen and shopmen were engaged in filling p the damaged tracks west of Wooster. Another pile driver arrived at Lucas and was it to work at Bridge No. 147, a fifty foot stone arch over Rocky Fork, the west approach which was so badly washed that it was necessary to build 42 feet of trestle to span the eak. Considerable difficulty was encountered on account of the stone from a stroyed wing wall being left where the piling was to be driven. At Bridge No. 146, it s found necessary to build run-arounds to clear the old structure, requiring trestle) feet long for each track.

A Pennsylvania Railroad pile driver arrived at Lakeville on the evening of the h, and it was desired to use this instead of the driver then at work at Bridge No. , as it was equipped with a steam hammer for more rapid work. In bringing it up osition, however, it was overturned through the straightening of a guy-rope hook to the strain caused by the unusual superelevation of the track on a curve. The man of the outfit was killed and an engineer severely injured and the pile driver was amaged that it had to be returned to the shop for repairs. The work proceeded the old driver after the wreckage was cleared up.

By this time the Ohio River had gotten very high at the eastern end of the Division, some tracks at Conway were under water and No. 4 track, nearest the river, was out of service on account of the embankment being badly washed. Landslides at ield and West Rochester also required attention.

On Friday, March 28th, trestle for one track having been completed at Bridge No. he pile driver proceeded to Loudonville, and started work at Bridge No. 139, where 750 feet long was to be trestled or filled. The Division gangs were reinforced with rom the Pennsylvania Railroad and Cumberland Valley Railway, the latter road ing also a portable electric light plant, so that arc lamps could be placed across p to facilitate night work.

the west end of the work, the division forces had been supplemented with gangs e Western, Chicago Terminal, and Cleveland & Pittsburgh Divisions and some tors' men. One track having been provided at Bridge No. 147, the driver ed to Bridge No. 146.

The work done in repairing the damage on the Eastern Division may be summarized as follows:

Location	Length of Trestle Built (Total for Two Tracks)	Number of Piling Driven	Frame Bents Constructed	Cars of Filling Material Used
East of Wooster...	....	....	....	20
West of Wooster..	40 feet	16	....	100
Lakeville.........	30 feet	12	....	200
Bridge No. 136....	136 feet	46	....	....
Bridge No. 139....	822 feet	254	15	400
Bridge No. 141....	219 feet	68	14	....
ridge No. 143....	....	....	....	10
ridge No. 144....	....	....	....	37
ridge No. 145....	581 feet	259	3	....
ridge No. 146....	700 feet	291	3	10
ridge No. 147....	42 feet	16	....	....
. P. 167........	....	....	....	50
idge No. 149....	....	....	....	10
Total........	2,570 feet	962	35	837

Ohio, west of. March 31, 1913.

Repairing tracks at washout at M. P. 153.
Water had been 5 feet 9 inches above top of rail.

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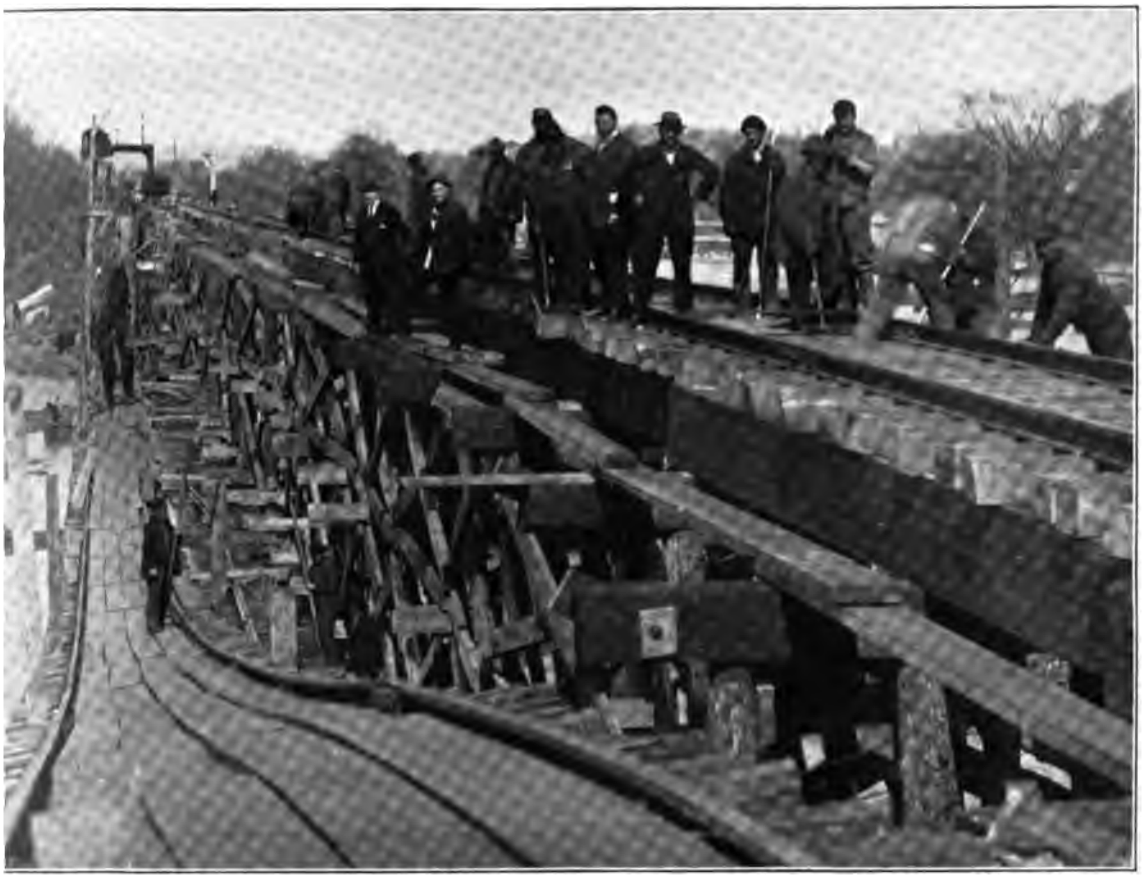
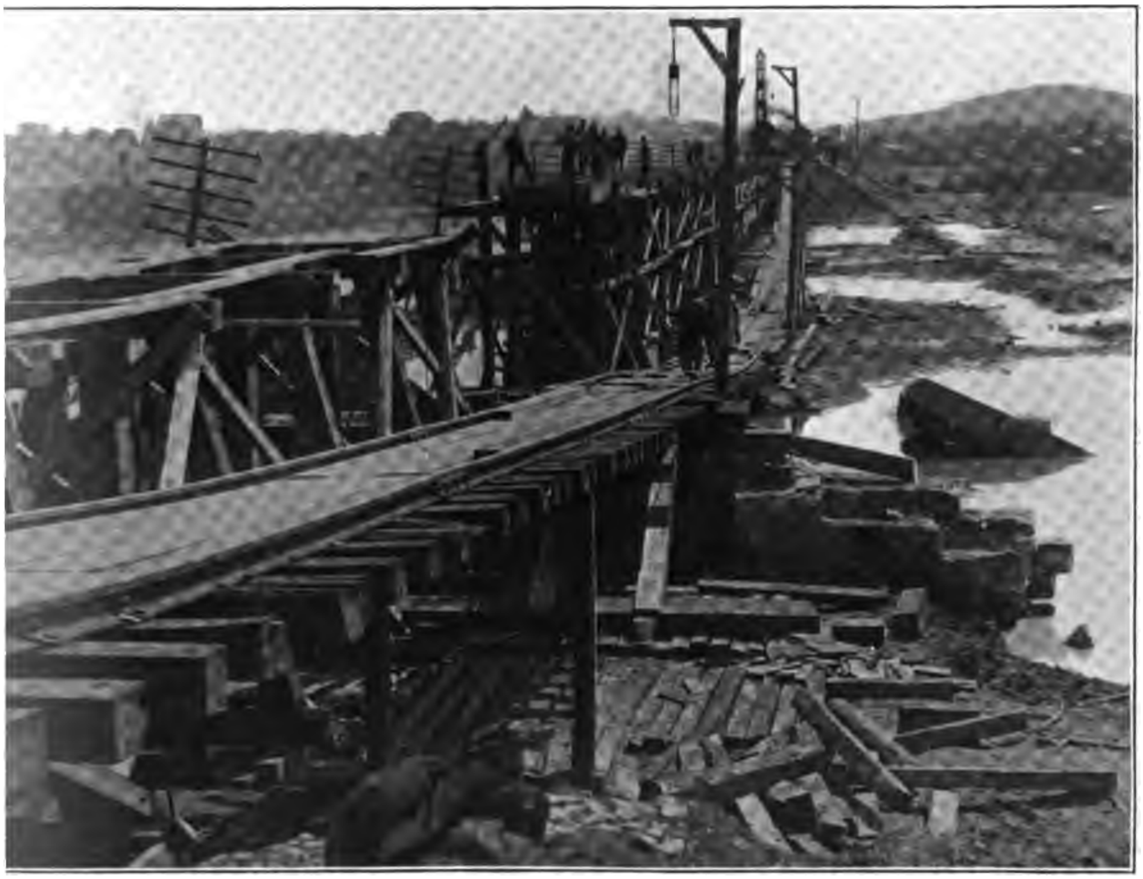


ille, Ohio, west of. April 2, 1913.
dge No. 139, over road and mill race; temporary trestle for one track completed, and about ready for service—looking west.



Ohio, west of. April 1, 1913.
ridge No. 139, over road and mill race; temporary trestle for one track about completed. Looking east.

Pe

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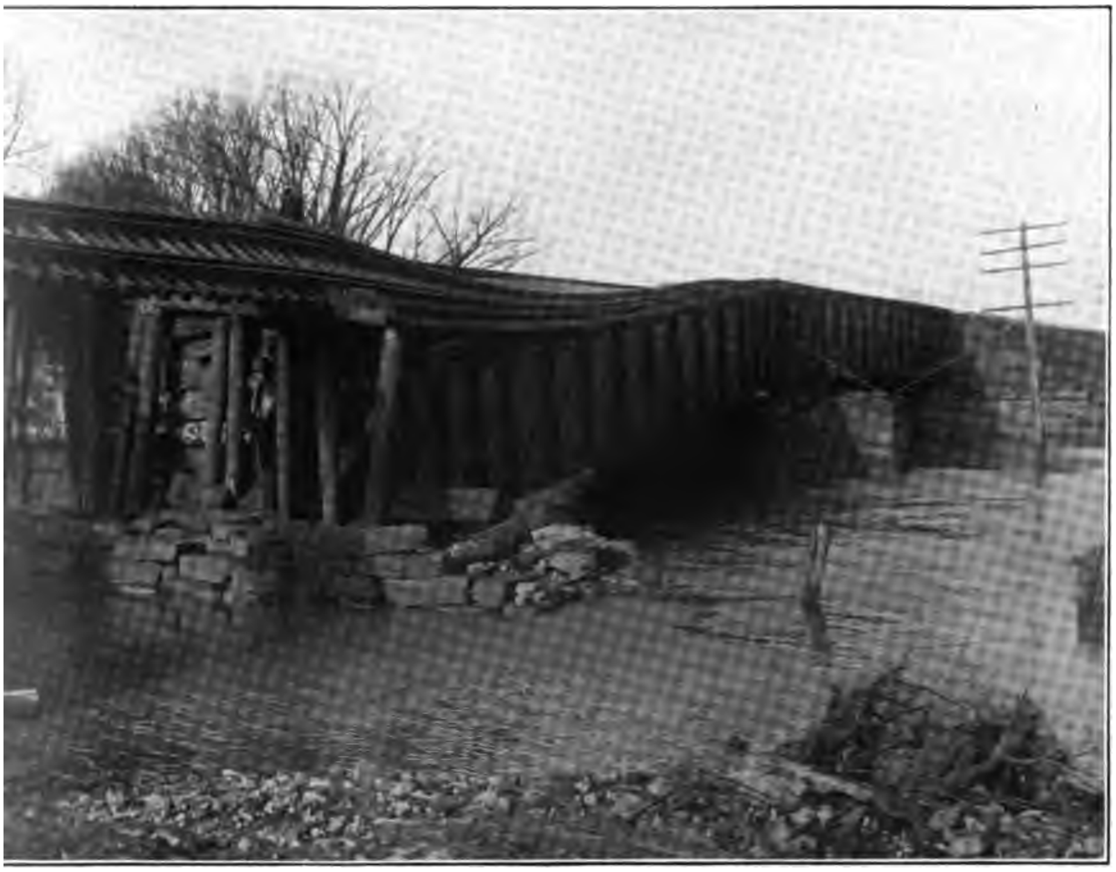
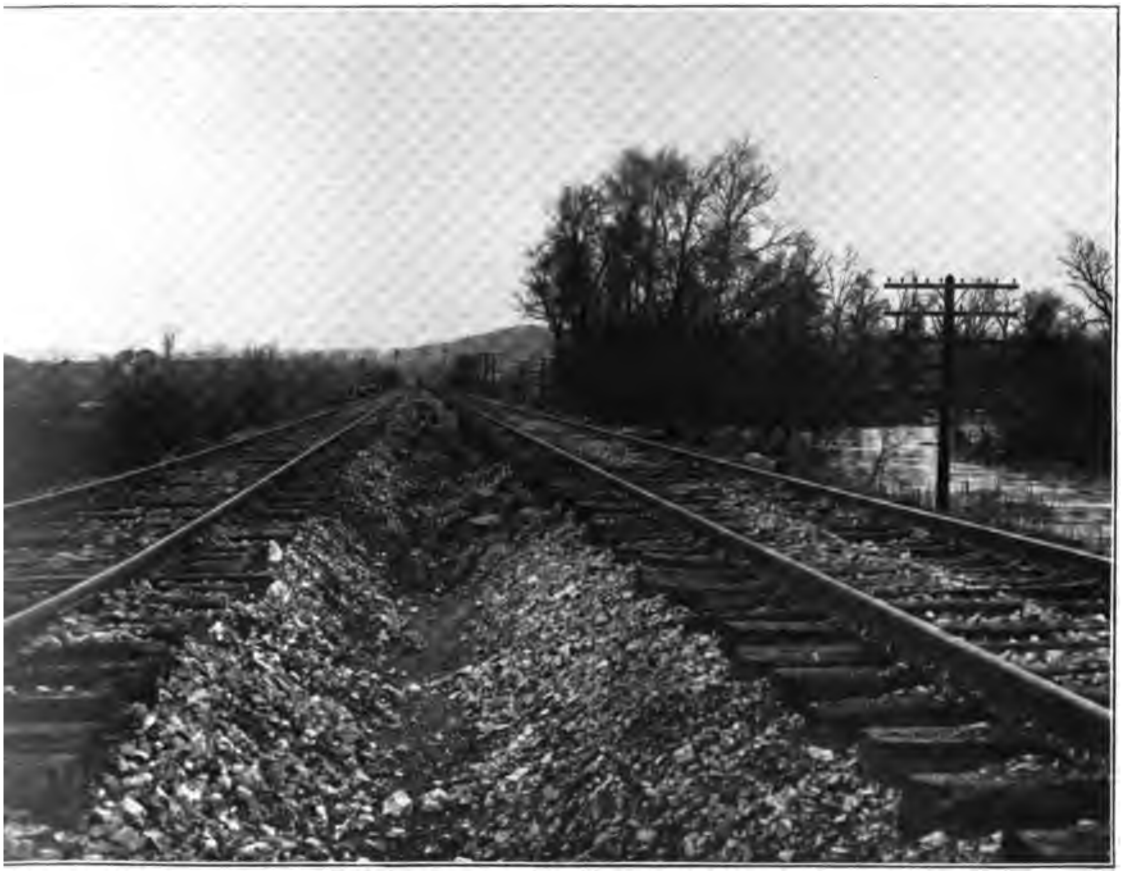
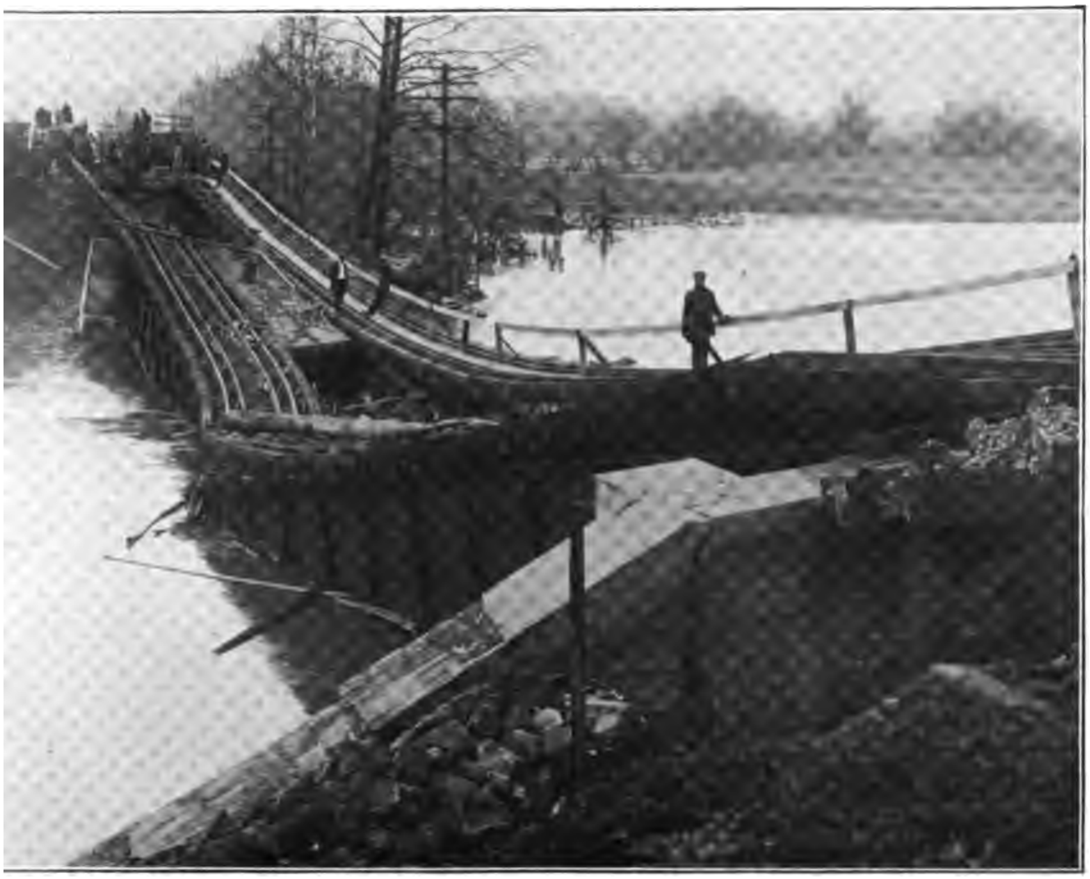


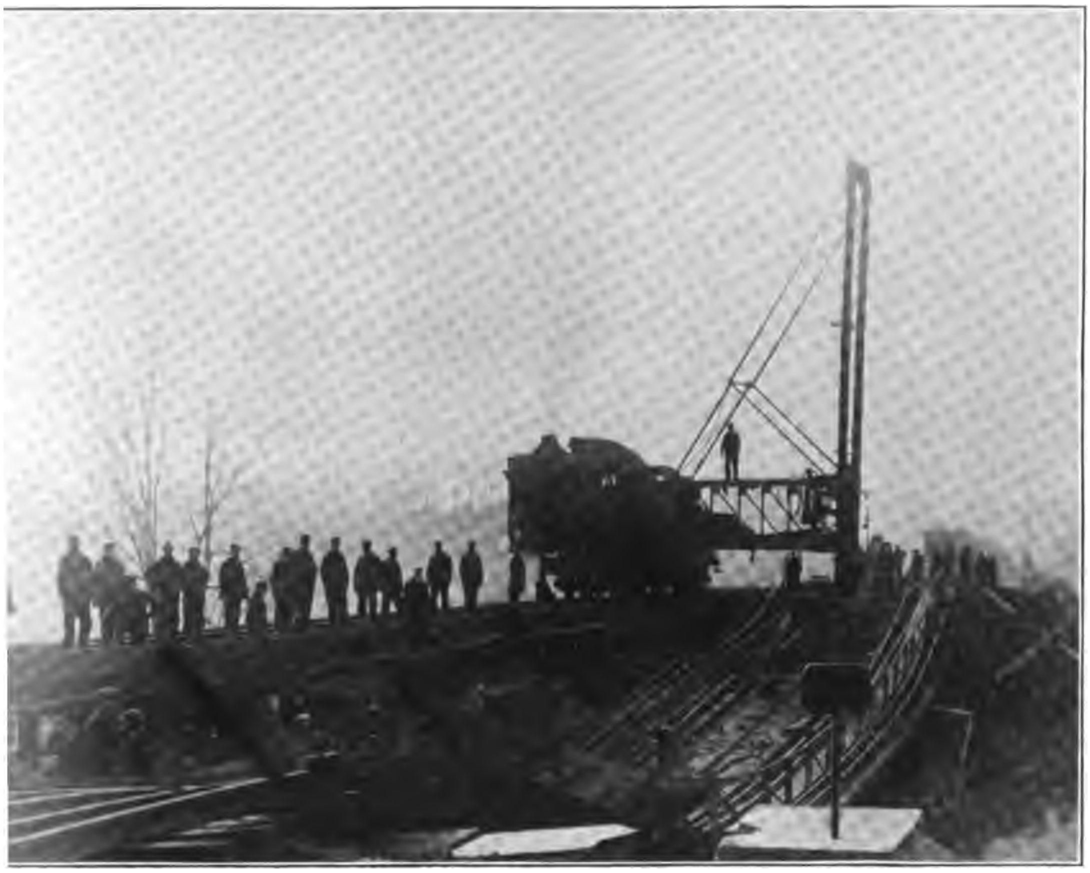
:, Ohio. March 31, 1913.
idge 141, over Black Fork, showing east approach and abutment destroyed.



hio, west of. March 31, 1913.
Looking west over Bridge 143, over Black Fork, showing fill washed away and replaced for service.



east of. March 31, 1913.
No. 145, over Black Fork; pier and both abutments and 100 feet of approach destroyed. Pile driver starting repair work at west side.



east of. April 1, 1913.
o. 145, over Black Fork, from east end, showing break in abutment as well as eneral condition of bridge. One "run-around" track about completed.

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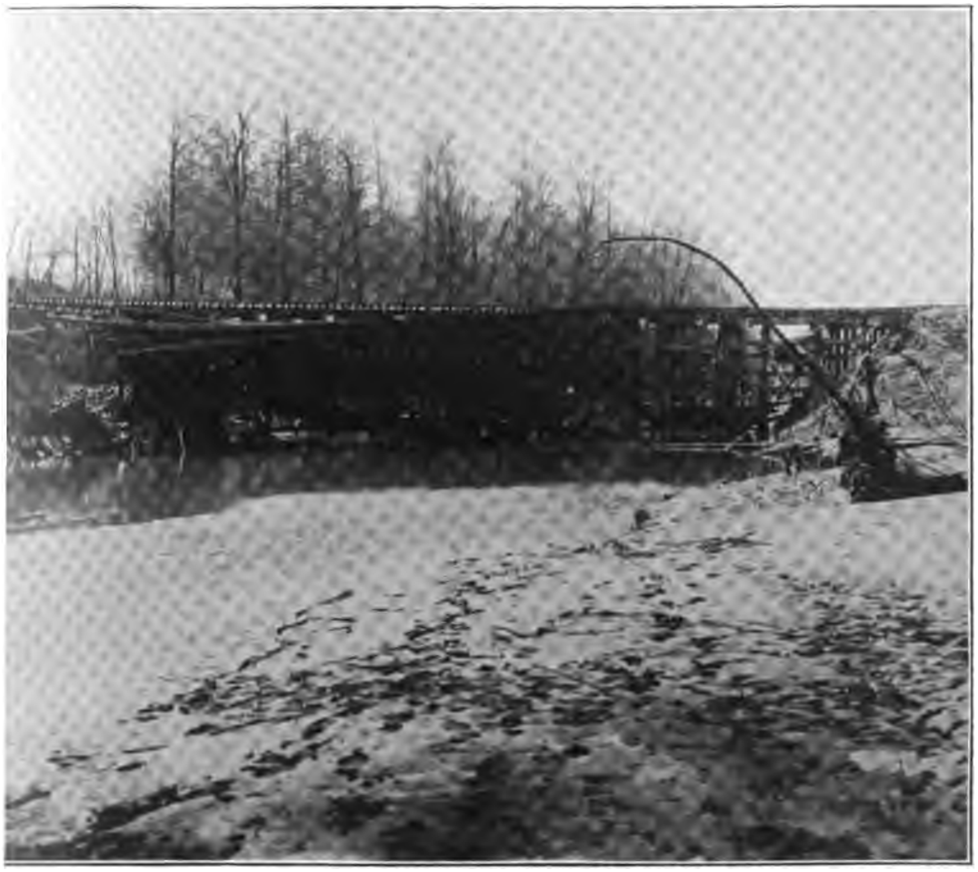
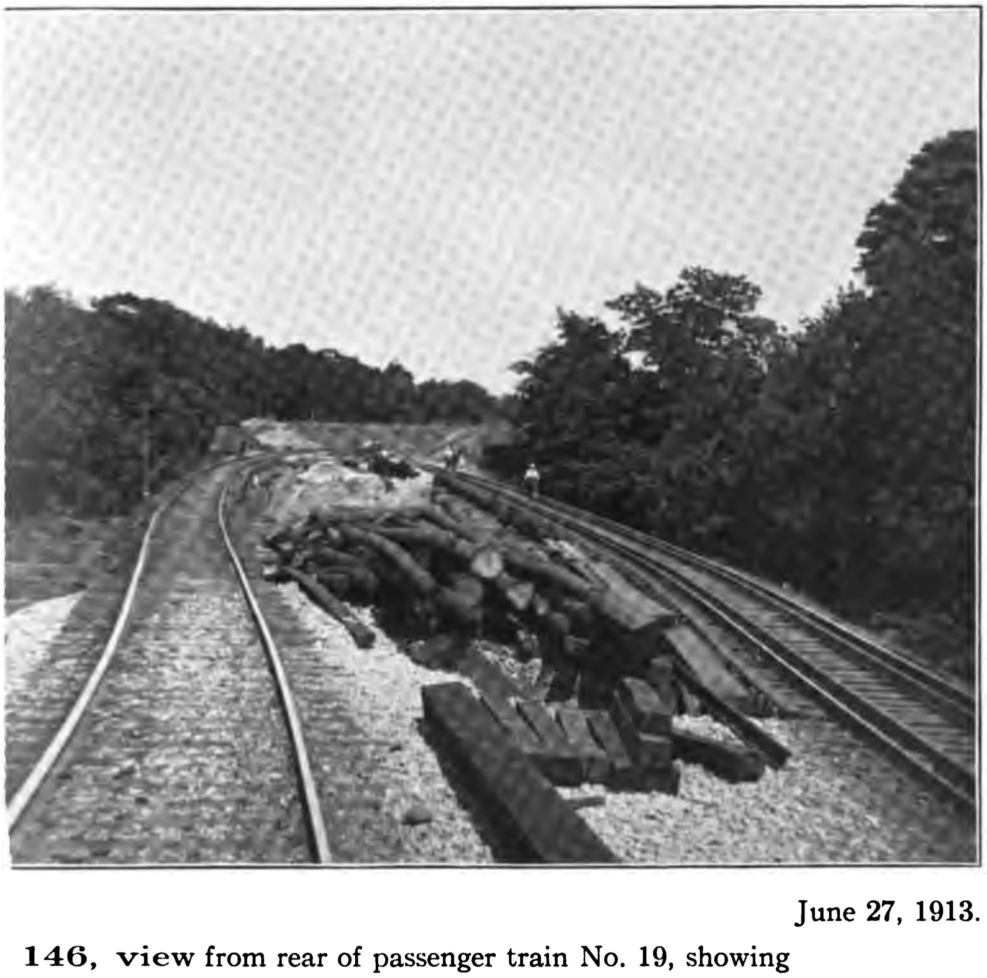


March 31, 1913.

g south at Bridge 146, over Rocky Fork, showing temporary trestle back of bridge destroyed.



June 27, 1913.

146, view from rear of passenger train No. 19, showing ‘ run-around" tracks on temporary trestles.

CHAPTER 15.

WESTERN DIVISION.

ivision suffered damage only in western Ohio. It there traverses
ountry in which the water found plenty of room to spread out.
vas heavy through all this district, and the eastern end of the
e belt of greatest rainfall, the only point where conditions were such
affic was just east of Delphos, where two insignificant creeks, flowing
vard the Auglaize River, found Bridges, or culverts rather, 182
r their accommodation.

ut one third of a mile west of Auglaize, was originally a 16 foot
t was filled in, except for a twenty-four inch cast iron pipe which
tom of the opening. This waterway was two small for the March
vater broke through the fill, it washed away about 120 feet of the
art of the distance it was necessary to trestle over the opening
e replaced with a bridge of the original span.

ut one mile west of Auglaize, was a six foot stone arch, of which
he older track was destroyed, and with it about forty lineal feet
e damaged arch was rebuilt in concrete.

enings were trestled for single track by six o'clock on the morning
and the Western Division was ready for service. As the through
being detoured via the Lake Shore, and no route was open for
ng but local service was performed until the opening of the Erie
ollowing day, and then only a very limited service for a week or

the St. Mary's River threatened damage, but did no more than
This was foreseen in time to provide a temporary pumping plant
caused no delay to traffic.

the river valley was flooded, and four of the children drowned
m out with ordinary row boats. To rescue the seventy orphans
ements were made through the Chicago Terminal Division officers
rew from Chicago to Fort Wayne by special train. Within an
t Fort Wayne, all who had been marooned in the building were
ground.

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mage to telegraph lines by wind and sleet the Chicago Terminal
cted by the flood.

CHAPTER 16.

CLEVELAND AND PITTSBURGH DIVISION.

& P. Division main line, from Alliance to Cleveland, was not out of service
out three hours on the 25th, and was used as a detour route for all the
hicago and general western business during the entire flood period.

line along the Ohio River and the various branches, however, did not fare so
was first interrupted on the Tuscarawas Branch, by a landslide near Zoar,
March. This had not been cleared, when the Tuscarawas River covered
r five or six miles. After the water went down, work was resumed,
ade ready for service around the slide on the 29th, and service on the
ed. Similar landslides occurred at many points on the Division on the
but it was managed to keep the rest of the road open for operation until
overflowed the tracks all along its valley on the night of the 26th and on

er went down, it was found that comparatively little damage had been
s were repaired for service without much delay. At Brilliant, two bents
been carried away, with considerable fill. A pile driver could not be
er mounted on a flat car was tried ineffectually, and finally a pile driver
of a locomotive crane and a steam hammer. This answered the purpose,
owly, and the break was not cleared until the afternoon of April 2d.

ntime, the balance of the Division had been put in fair shape, and ser-
d throughout.

hio River submerged the tracks, and the Cleveland-Pittsburgh trains
via the Eastern Division, shuttle service was performed between Alli-
ille, and between Yellow Creek and Mingo Junction.

ille the Ohio rose 10.4 feet over the tracks of the C. & P. Division,
n 6.7 feet, at Bellaire 9.8 feet, and at Powhatan 12.0 feet. At inter-
he tracks were not submerged so far, and at many points they were
stage, but over most of the River Division there was a thick deposit
debris. Some idea of the conditions during the period of high water
he photographs shown in chapters 4 and 5.

CHAPTER 17.

ERIE AND ASHTABULA DIVISION.

\. Division, situated in the valleys of the Beaver, Mahoning and Shenango
outh of the divide between the basins of the Ohio River and the Great
ty well submerged, but as this is a district in which floods may be expected
e track construction is such that little damage was done. In fact,
where the line was really broken was Bridge 68, on the New Castle
ıe Shenango River, which was destroyed.

25th, the tracks were under water at Niles and Warren early in the
d seven feet respectively. These are the low spots where high water
ervice at every flood. At numerous other points the water was up to
cks, and traffic was stopped.

ı and 27th, the water rose to heights far above all previous records
everything in the valleys, from Kenwood to Warren and Jamestown.
ıeight of the water may be gained from the photographs included in
d 5, the maximum depth over the tracks being 18.8 feet. On the
!7th an old covered wagon bridge, up stream from Bridge 68, floated
l lodged against the railroad bridge. This choked the stream until
ing its way underneath, undermined the piers of Bridge 68, and let
water, with a load of cars which had been placed on it to hold the
This did not interrupt traffic, as a roundabout route was avail-
rains could be run with slight delay. The bridge was replaced with
trestle, completed on May 2d. Later the girders were raised and
building permanently.

water went down, service was resumed, and on the night of March
ivision was restored to service, all schedules being filled normally on
ds and enginehouses were covered with mud, slime and debris, how-
of cleaning up took weeks of work.

CHAPTER 18.

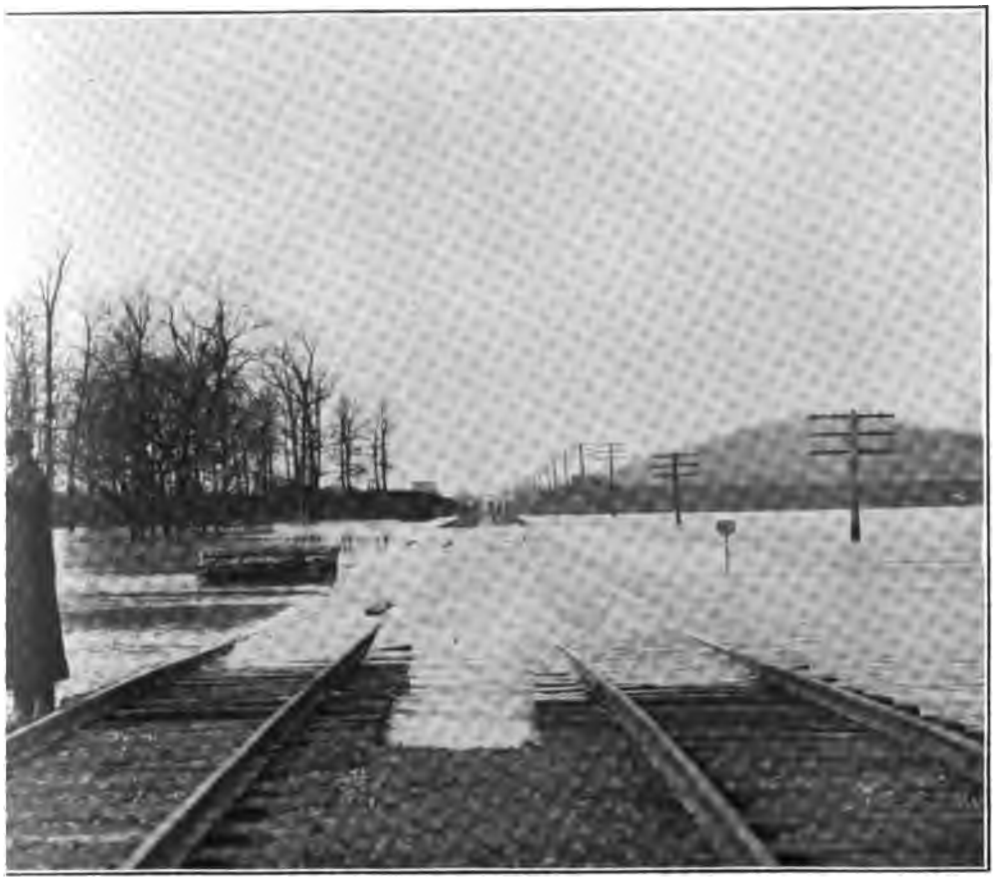
PITTSBURGH DIVISION.

burgh Division, while not itself lying in the belt of greatest rainfall, he valleys of the Muskingum and its tributaries, the Tuscarawas River ika Creek, from Dennison westwardly fifty-four miles to Black Run. es low in the valleys, and is crossed and recrossed by these streams. Trinway, where Wakatomika Creek joins the river, the Muskingum south through a narrow pass in the hill forming the southern limit of al valley, or flood plain, of the streams uniting there. The quantity of to this narrow pass by these streams exceeded its capacity, and the ated in the valley until its height far exceeded all previous records. s this valley became practically a lake, not exactly of back water, but the outlet in the main stream, with sluggish back water in the over- on either side, all full of buildings, trees, animals, crossties and all sorts tracks of the Pittsburgh Division were under water for most of this the water was always higher on one side of the tracks than the other, a dam, with sluiceways where there were culverts. At these culverts ly succeeded in cutting out the embankment on either side, and the roken it was quickly destroyed, often for long distances, the track being d twisted beyond any possibility of replacement except by completely

evening, March 24th, the Eastern Division having been washed out at y on the 25th, the Northwest System passenger trains were handled s and Pittsburgh, together with the regular schedules. By Tuesday 5th, the streams got so high from the heavy rainfall above that they s damage on the Pittsburgh Division. Passenger trains were annulled and arrangements made for detouring through trains via some route ed district.

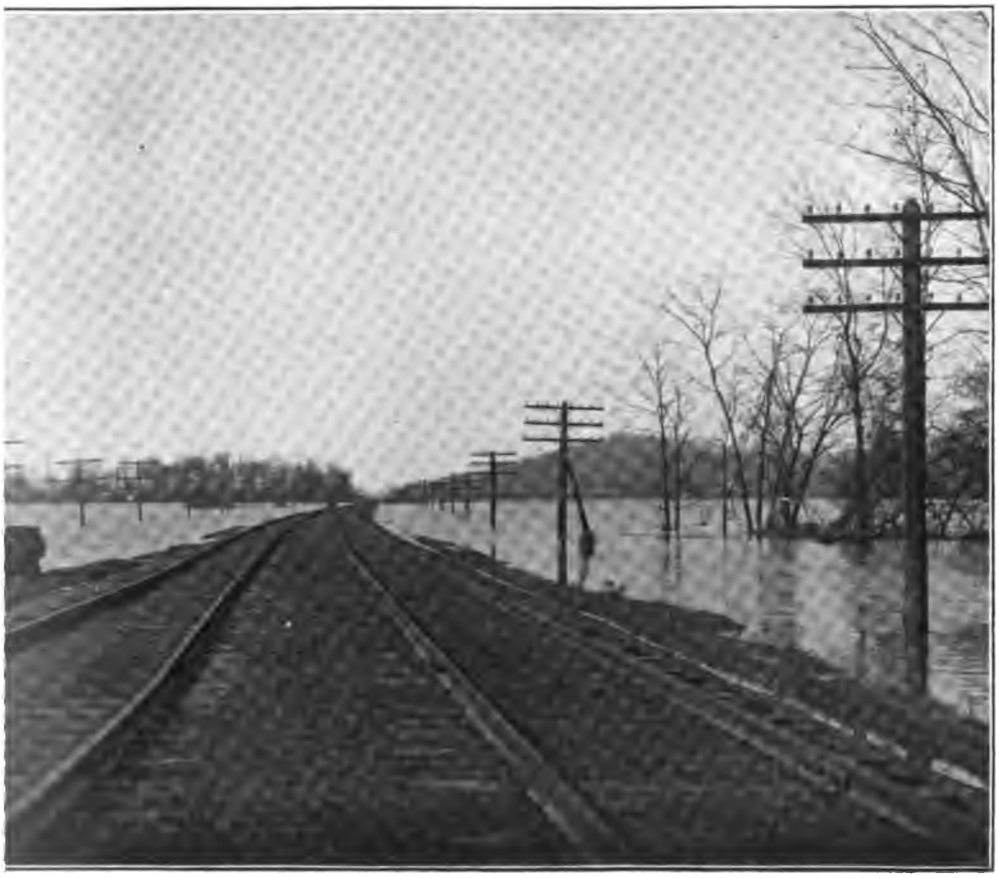
ual break in the line was at Bridge 101, a stone cattle-pass east of the water washed away the fill all around the stonework, and destroyed e. This occurred about nine-thirty o'clock in the evening, and a discovered the washout, while enroute to Bridge No. 100, over iver, about a mile east of there, flagged a Big Four passenger train m Columbus to Pittsburgh, stopping them clear of the damaged was returned to Columbus.

I., Bridge 100, over the Muskingum, was washed away at the west g into the river, and the Division was effectually put out of service. ent out, and the roadbed was destroyed at numerous places between uscarawas, fifty miles.



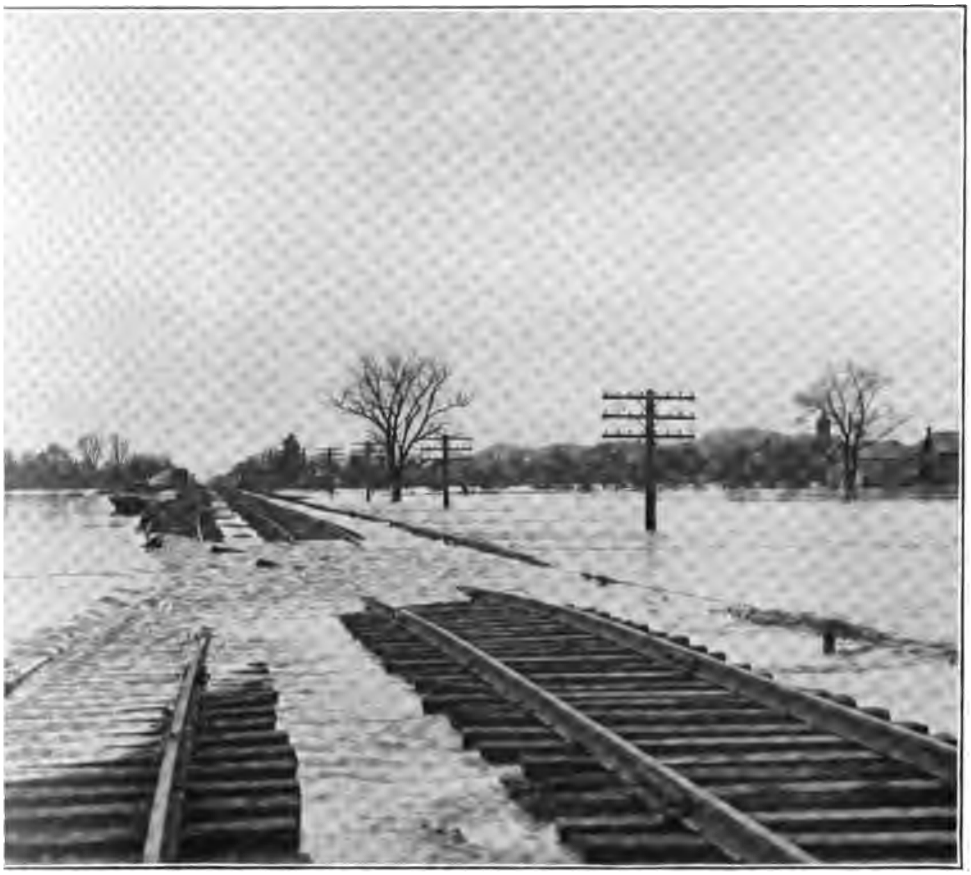
ɔ. March 28, 1913.

91½, one-half mile east of Station. Water had fallen 10 inches.



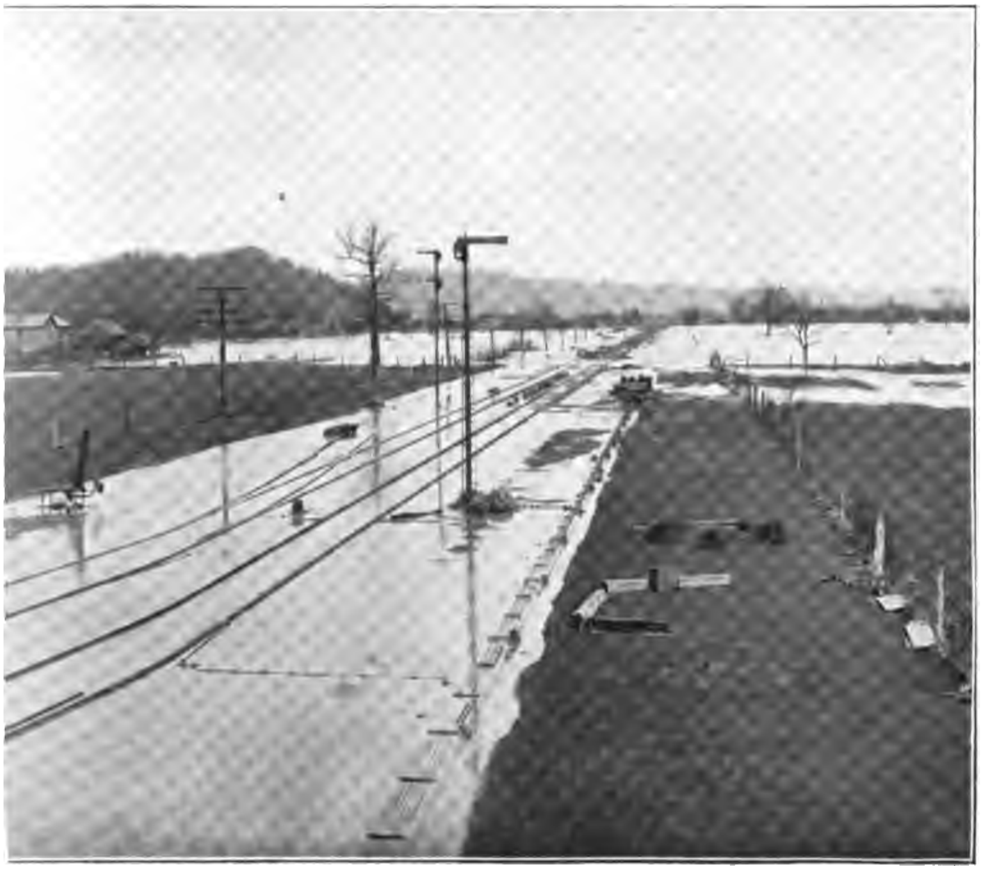
st of. March 28, 1913.

Water had fallen one foot.



io, east of. March 28, 1913.

nile east of Station, view east. Water had fallen a foot or more.

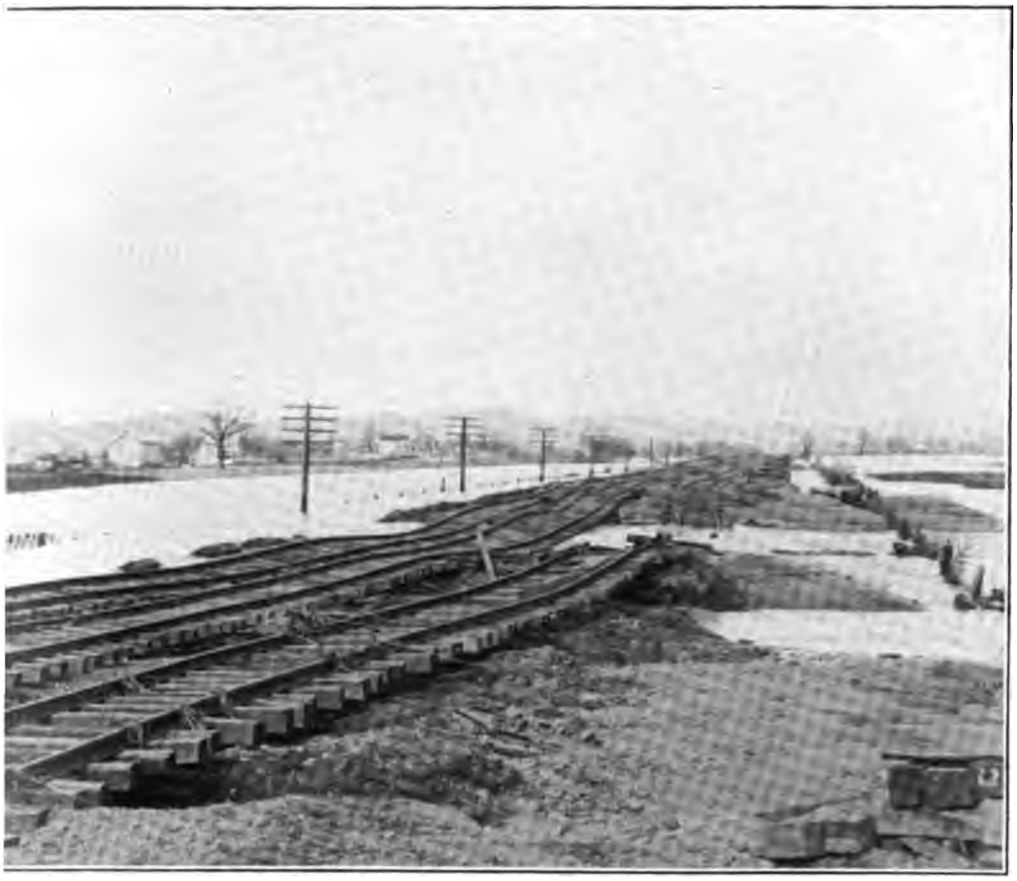


est of. March 28, 1913.

from "DG" Tower. Water had fallen 16 inches.

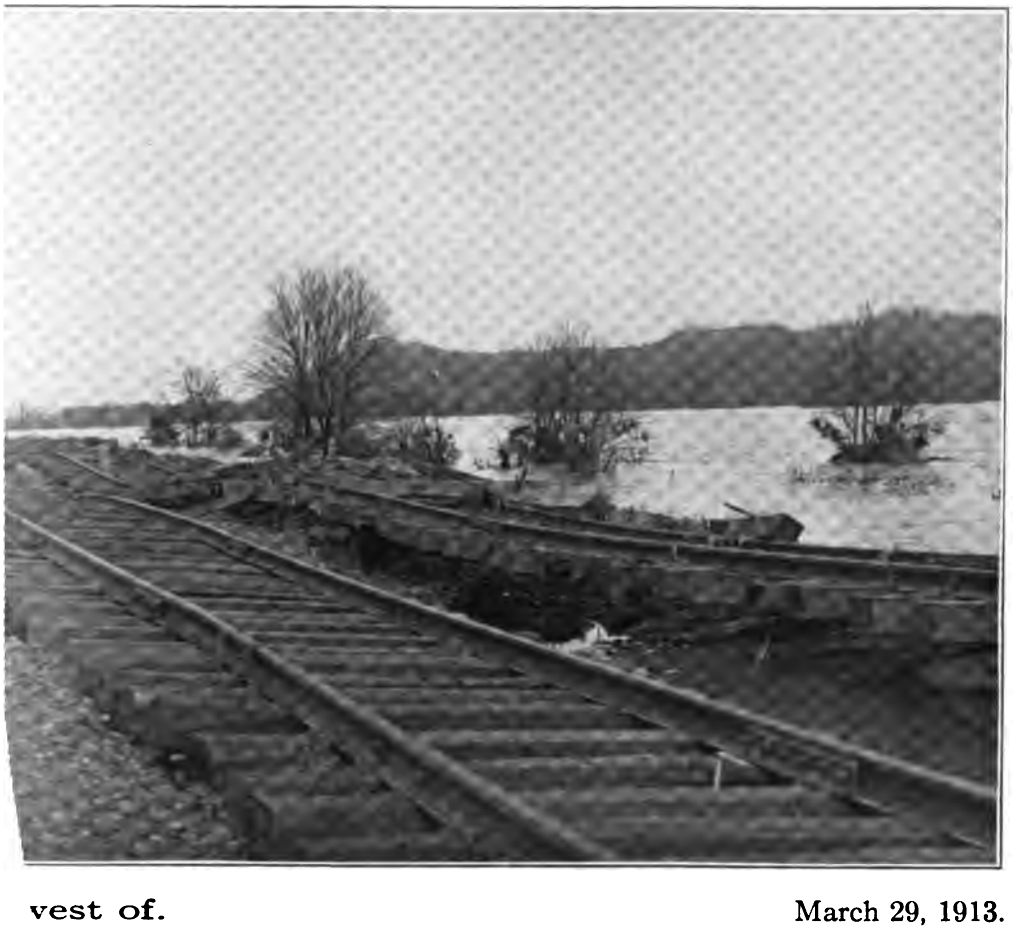
P

F



Ohio, west of. March 29, 1913.

View east, 1¾ miles west of Station.



vest of. March 29, 1913.

View east, at point 2¼ miles west of Station.

C

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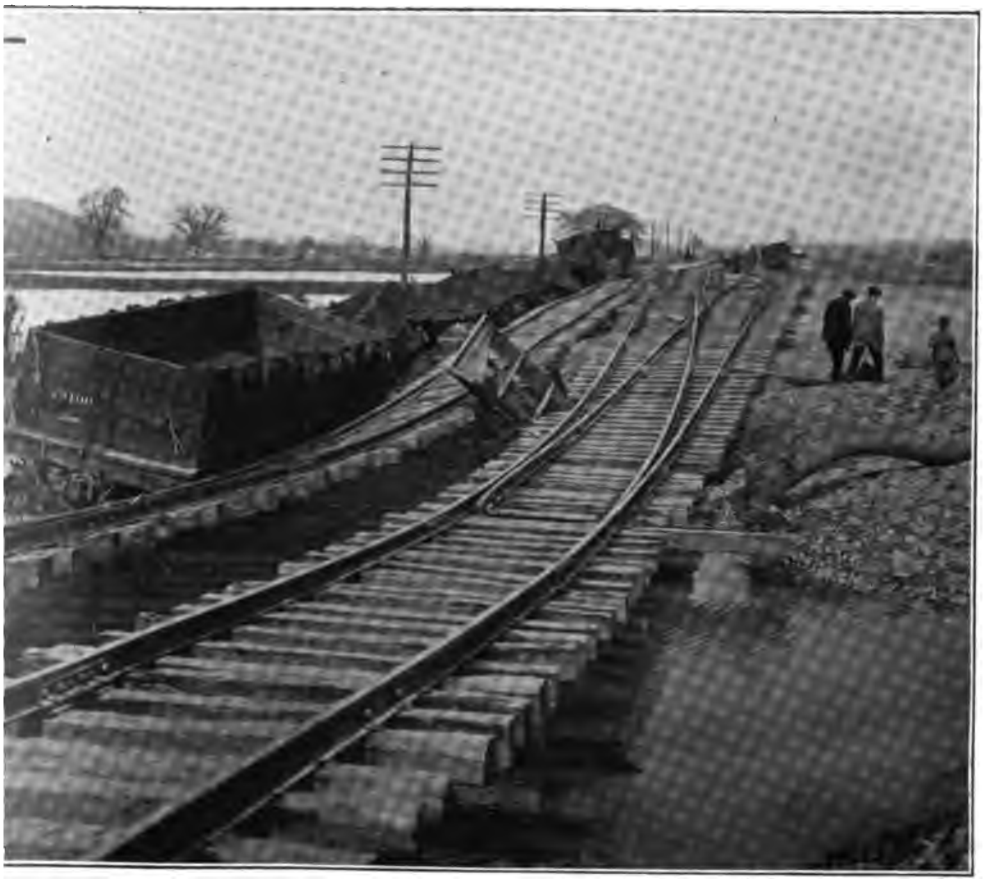
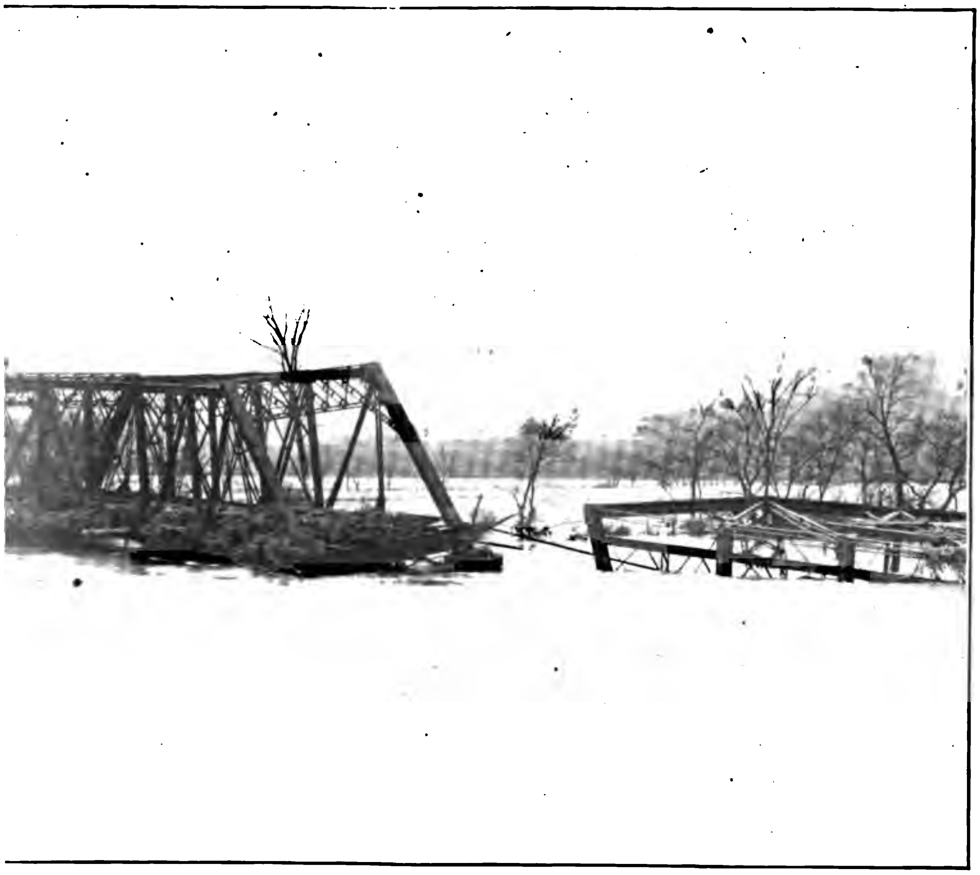


t of. March 29, 1913.

Looking east at "Clow."



March 29, 1913.

west bank of Muskingum River; two spans gone, one span
pped on one corner, and one span uninjured.

ese points the Wheeling & Lake Erie has a single track road, and it was at it might be possible to repair the damage done it, and put in connections , and so provide a route sooner than the Pan Handle could be opened. evealed their condition to be equally as bad or worse than that of the and the scheme had to be dropped.

lso found that many new cross ties that had been stored along the right is year's renewals had been carried away by the flood, and that where the n torn up many of the ties had been carried away, the total being some- neighborhood of 50,000. Those that were found lodged where they could track men were used in rebuilding work, but most of them were washed hat they could not be recovered except by team and wagons. An offer farmers and the public of 10 cents for each cross tie returned, and under al of 3,750 was so returned during the succeeding weeks.

arch 30th, the stage of water now permitting, the work of repair was est. The force of track men was augmented by two hundred men from , and a hundred and seventy-five laborers from New York. Bridge timber arriving in quantity. The force working at the east end of the washed out up in the vicinity of Port Washington and Glasgow Curve, and late to the west approach of Bridge 94 over the Tuscarawas River, west town. The force that had been organized at the west end began the at Bridge 104, where a 10 foot stone arch and the embankment had been quiring a trestle three hundred feet long.

y the 31st, the pile driver began work west of Bridge 94 about 9:00 P. M. about fifty feet of trestle had been driven, toward closing a gap o 20 feet deep. Arrangements were made to build trestle bents at the hem across the break and set then up at the west side.

with large gangs, and whatever filling material could be secured, ake of the pile driver outfits, and put the track in shape for service sible.

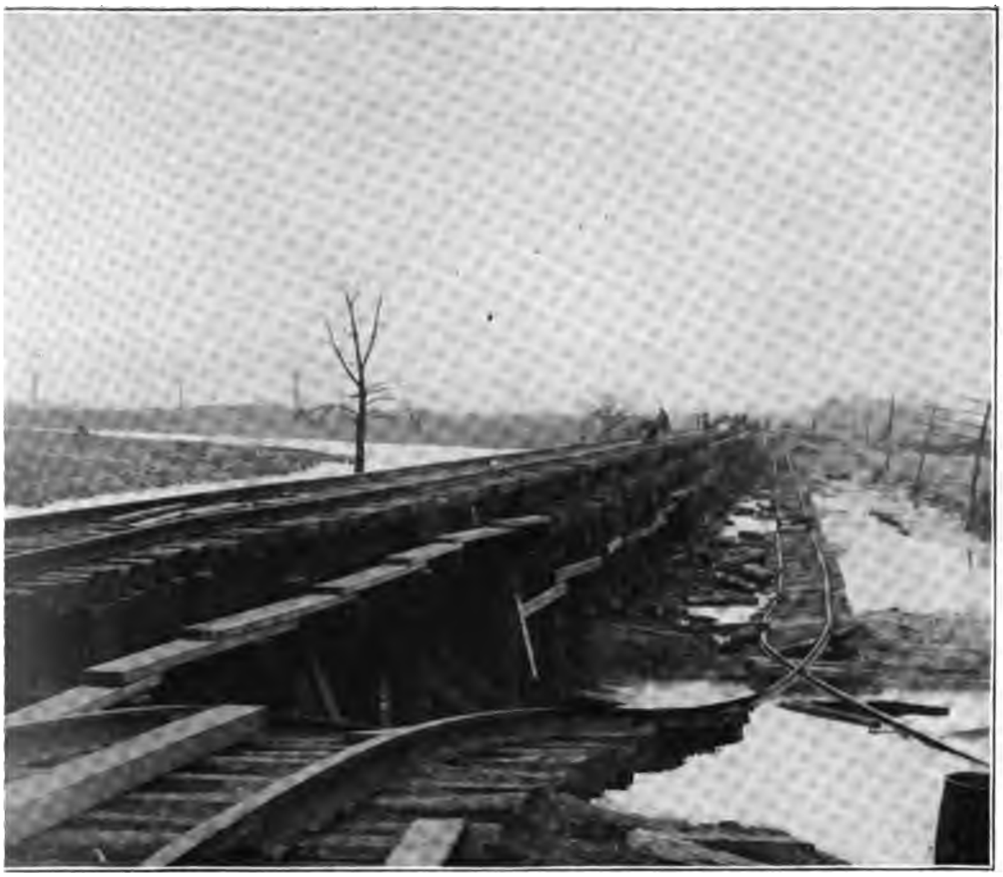
K. road was opened to Wheeling, the first train arriving there at

the force at the east end continued to drive piles and build trestle , and to repair the tracks over which the driver had been brought. est end continued to drive trestle over the gap at Bridge 104, while g put in shape for use as far east as Trinway. In the evening the New h was opened for service.

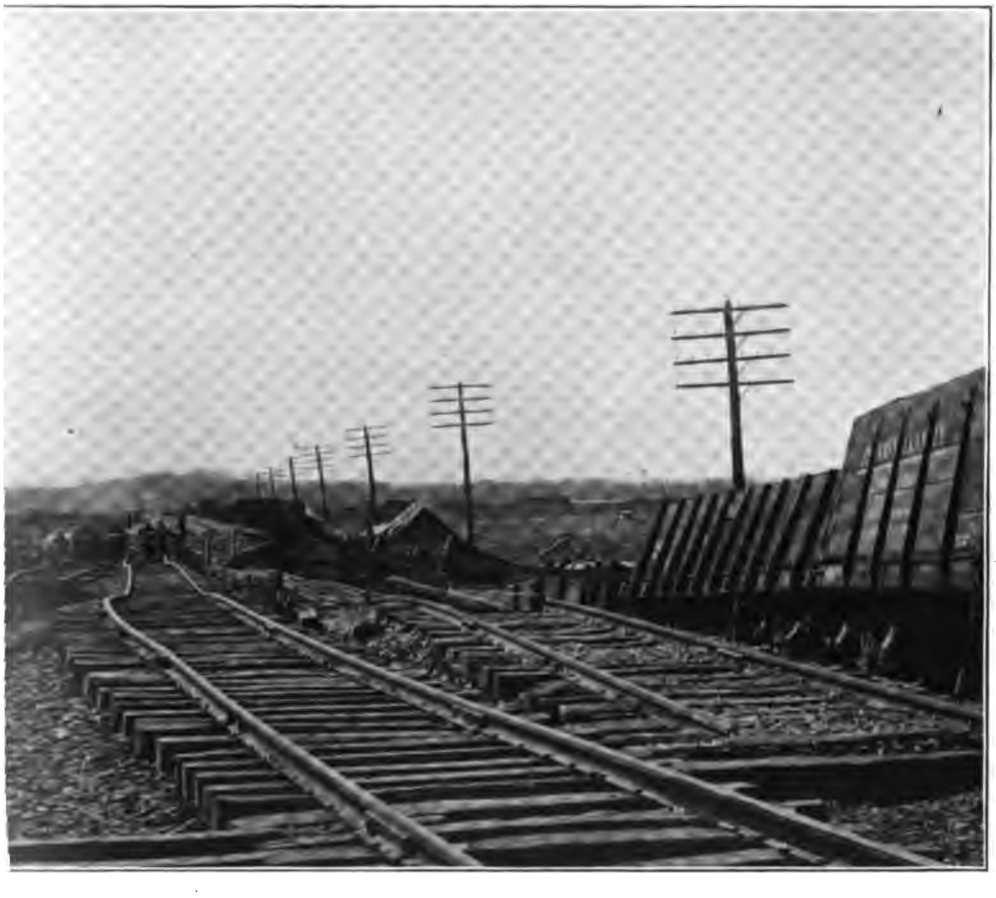
rk was begun on cribbing up the track and making it ready for work point where the driver was working, near Bridge 94, and Coshocton, iving of piling was finished the plant might be moved to the latter

en, who had been engaged to lift one corner of the second span of all, arrived there on the 2d, taking their heavy tools and material and began work of cribbing up the leaning span, which was to be aired for temporary service, leaving only two spans to be replaced

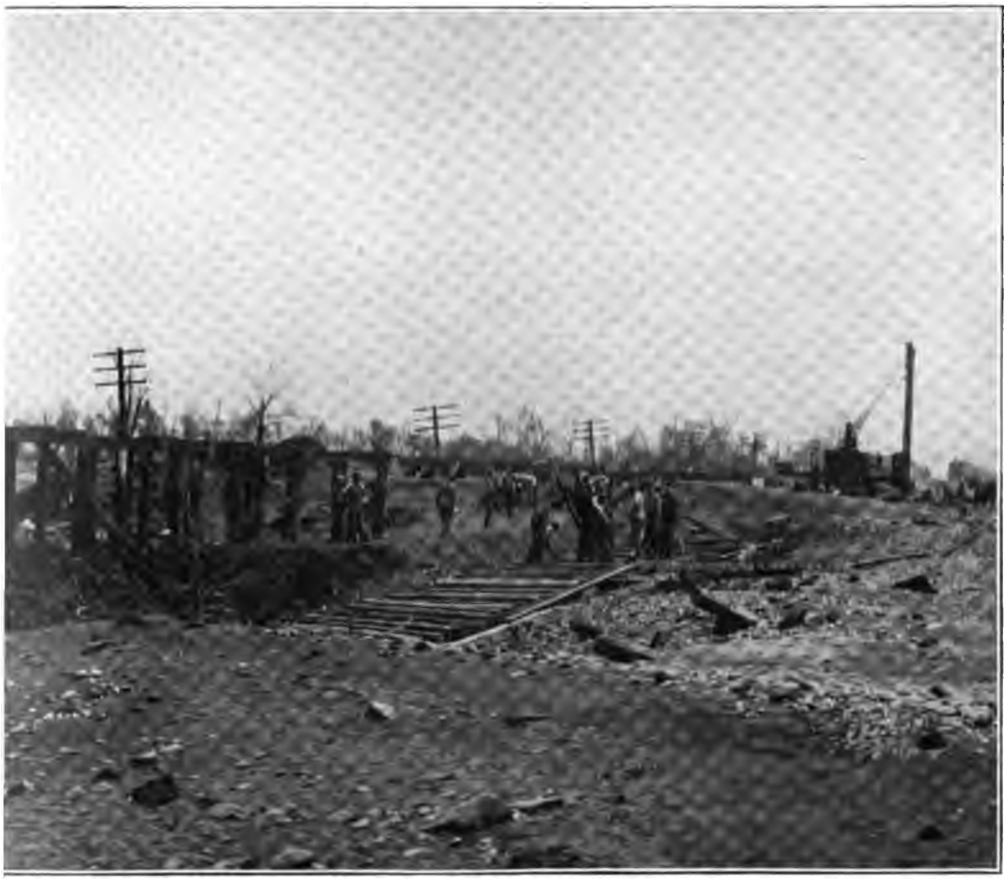
all day, and the rivers began to rise again during the night. Tuscarawas, at Gnadenhutten, which had not previously been in



Ohio, west of. April 3, 1913.
ꭓing west, about one-half mile west of Bridge 94, and showing temporary trestle for one track over washout.

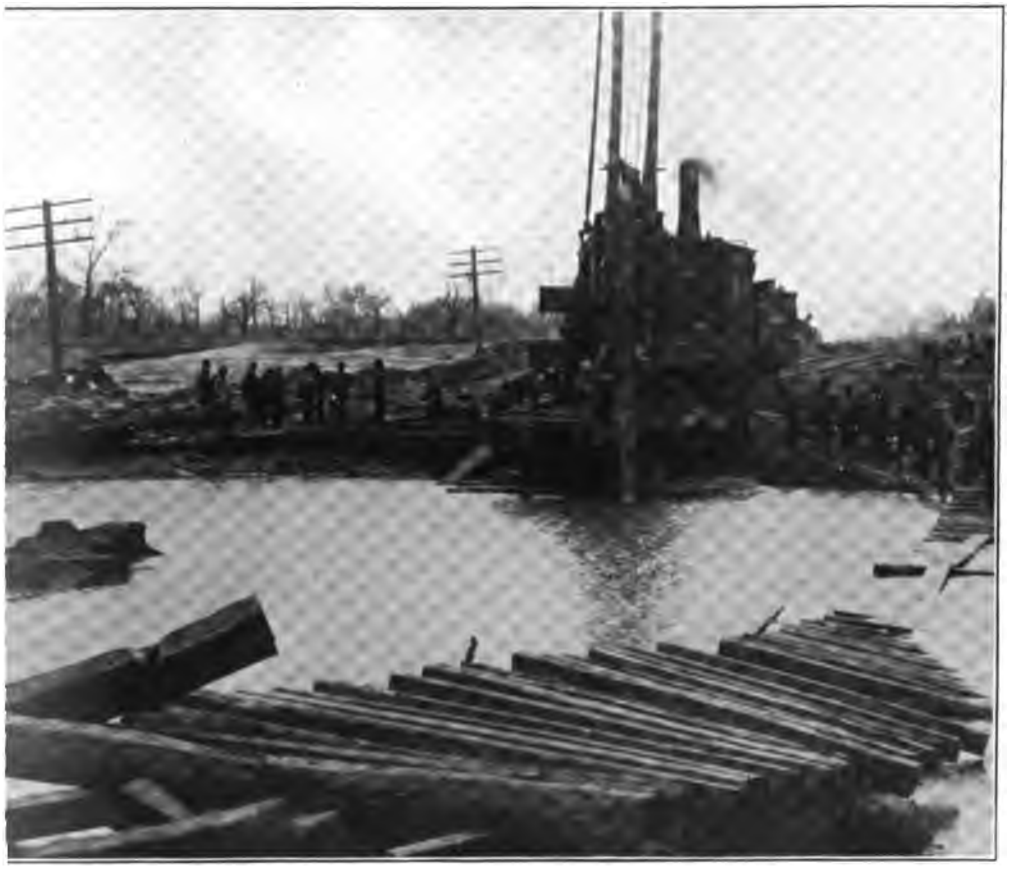


f. April 4, 1913.
vest of "Clow." Work trains have passed over the track on en are working, and are proceeding toward Bridge 100.



vest of. April 4, 1913.

Bridge 100 washed away, exposing piling driven in repairing damage done by flood of 1898, but not in condition for use.



of. April 4, 1913.

pest hole washed in approach to Bridge 100, over Muskingum River, driver working on "lower level."

arted on a second track on the permanent grade at the east side of the break, n the wake of the one working toward Bridge 100.

upply of very long piling having been exhausted, a seventy foot spruce pile oken in the driving, and the high wind shaking the driver and trestle, it sary to stop driving at the west side of the river until the trestle was ied and arrangements could be made to cut long piling of hard wood in the ng territory. These were difficult to find of suitable length and straightness, but re procured to permit advancing slowly with the work, while requests for long piles were sent out it all directions. A driver was secured which could drive low the track level, but at that it was found that seventy foot piles would .

nday the 7th, the driver on the lower level reached the west side of the break, of Bridge 100, and was started at work on the permanent grade at the west s low level track provided a means of reaching the bridge with tools and and a derrick was taken there to assist in repairing the second span. On the ribbing under this span was completed and the raising of the steel work started. work proceeded without much variation until Saturday the 12th, when one oss the break east of Bridge 100 was completed, and a second track over k west of Bridge 94.

unday morning, the 13th of April, the trestle was completed across the river 100. The damaged span having already been put in shape for use, a heavy as sent across the river at 6:50 A. M., and passenger service was resumed over burgh Division, eighteen and a half days after Bridge 101 and 100 went down. service was resumed on Sunday night.

tracks had been provided everywhere but at Bridge 100 and across the break of it, and the work of providing a second track through this district was not d until June 11th. Instead of trestling the river with the second track, cluster rs were driven, and girders laid on them, to prevent too great interference with m flow until such time as a permanent bridge could be built. When this second s completed, traffic was sent over it while the first track was rebuilt in the same a double track road was not available over the Muskingum River until the f August.

give an idea of the extent of the damage done on the Pittsburgh Division, and bution over the whole Division, the points of damage have been listed in detail.

PITTSBURGH DIVISION.

DETAILED LIST OF DAMAGE DONE BY FLOOD OF MARCH, 1913.

LOCATION AND DESCRIPTION	Date Cleared		Cu. Yds. of Fill	Cu. Yds. of Ballast	Lineal Feet Trestle	
	1st Track	2nd Track			1st Track	2nd Track
Roadbed washed out 250′ long, 12′ to 15′ deep. Trestle built on No. 2 track. Ballast washed badly for 1800′ west	3-31	4-4	4000	1000	132	
Embankment 300′ long, 12′ to 15′ deep, washed away along No. 2 track	3-31	4-4	1000			
Ballast washed out 4300′ long, including 1 hole 750′ long, 2′ deep, and 1 hole 850′ long, 2′ deep	3-31	4-4	1000	2500		
New Comerstown.						
Roadbed washed out under three tracks, 50′ long, 2′ to 3′ deep	3-31	4-12	300	100		
Roadbed washed out 860′ long, 14′ deep, both tracks	4-3	4-12	43000	1000	803	480
Ballast out under No. 2 track 500′	4-3			200		
Ballast washed out 1350′ under 3 tracks, including 1 hole 400′ long, 3′ to 15′ deep	4-3	4-4	4500	1600		
Isleta.						
Roadbed washed out 50′ long, 2′ deep	4-3	4-4		60		
Roadbed washed out 120′ long, 2′ deep	4-3	4-4		150		
Roadbed washed out 450′ long, 2′ to 6′ deep	4-3	4-4	2400	540		
Roadbed washed out 600′ long, 2′ to 8′ deep	4-3	4-4	3000	700		
West LaFayette.						
Bridge No. 96. Embankment badly washed	4-3		200			
Embankment washed along south sodline 2700′ long, and 20′ of Morgans Run Eastward platform washed away	4-3		1000			
Morgans Run.						
Light slip on south slope along No. 4 track.	4-3		50 (Excava.)			
Light slip on south slope along No. 4 track.	4-3		50 (Excava.)			
North embankment washed under No. 3 track 50′ long, 6′ deep	4-3		200			
North embankment washed out to end of ties along No. 3 track 100′ long	4-3		300			
Series of small holes washed out under No. 4 track	4-3		3500	100		
Coshocton.						
North embankment washed out under No. 1 track, 500′ long, 2′ to 6′ deep	4-3	4-13	600	150		
North embankment washed out under No. 1 track, 160′ long, 2′ deep	4-3	4-13	100	30		
1500′ of roadbed along No. 2 track badly washed to end of ties	4-3	4-13	1000	100		
1600′ of embankment washed out under drill track and 500′ of siding to J. Clow & Sons plant all washed away	4-3	4-13	6000	1300		
Roadbed washed out under three tracks, 1000′ long, 4′ to 16′ deep, and tracks washed out of line 20′	4-3	4-13	22000	1800		
Roadbed washed out 450′ long, 6′ to 8′ deep. Six cars derailed from siding. Ballast and bank cut out to end of ties 800′ long, 4′ deep, along No. 1 track, east of hole	4-3	4-13	4500	1000		
Roadbed washed out 1200′ long, 6′ to 10′ deep. 1300′ ballast washed out east of hole. 4 cars overturned	4-3	4-13	19000	3000		
Roadbed washed out 2700′ long, 10′ to 25′ deep	4-12	4-20	60000 (Low	3300 Grade)	2140 396	2106

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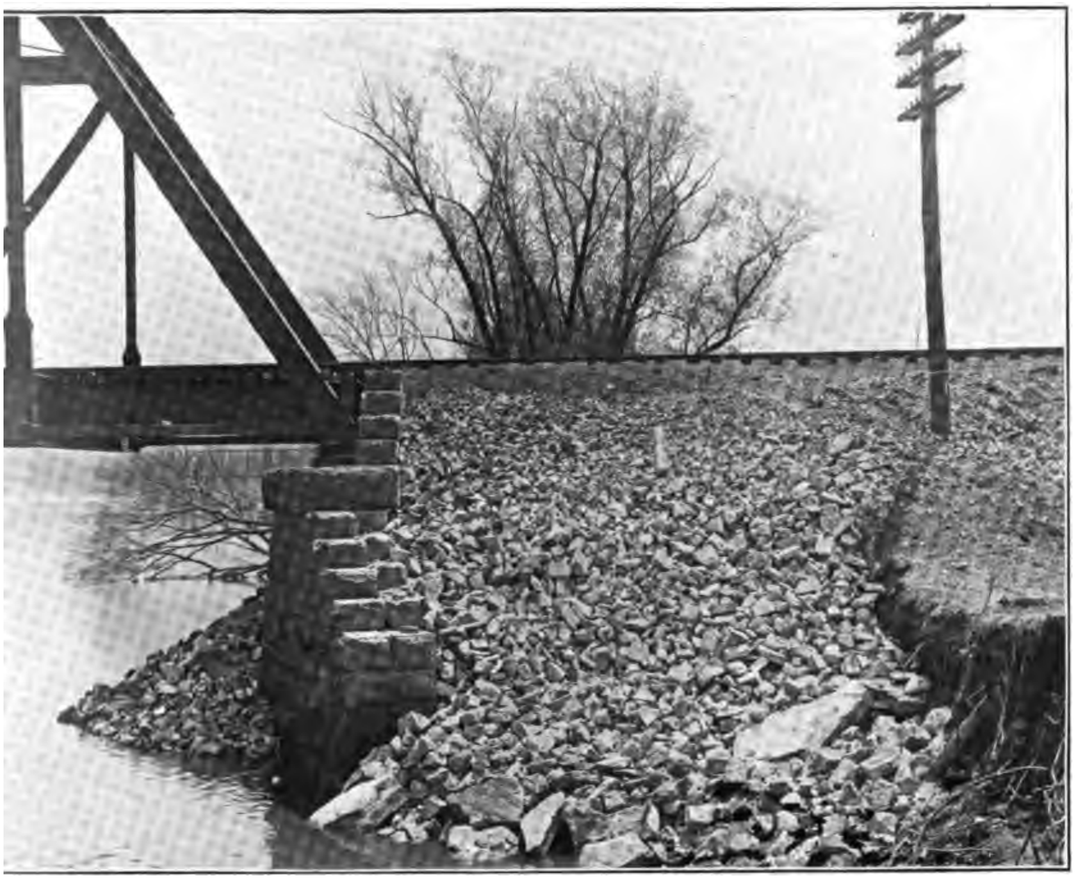
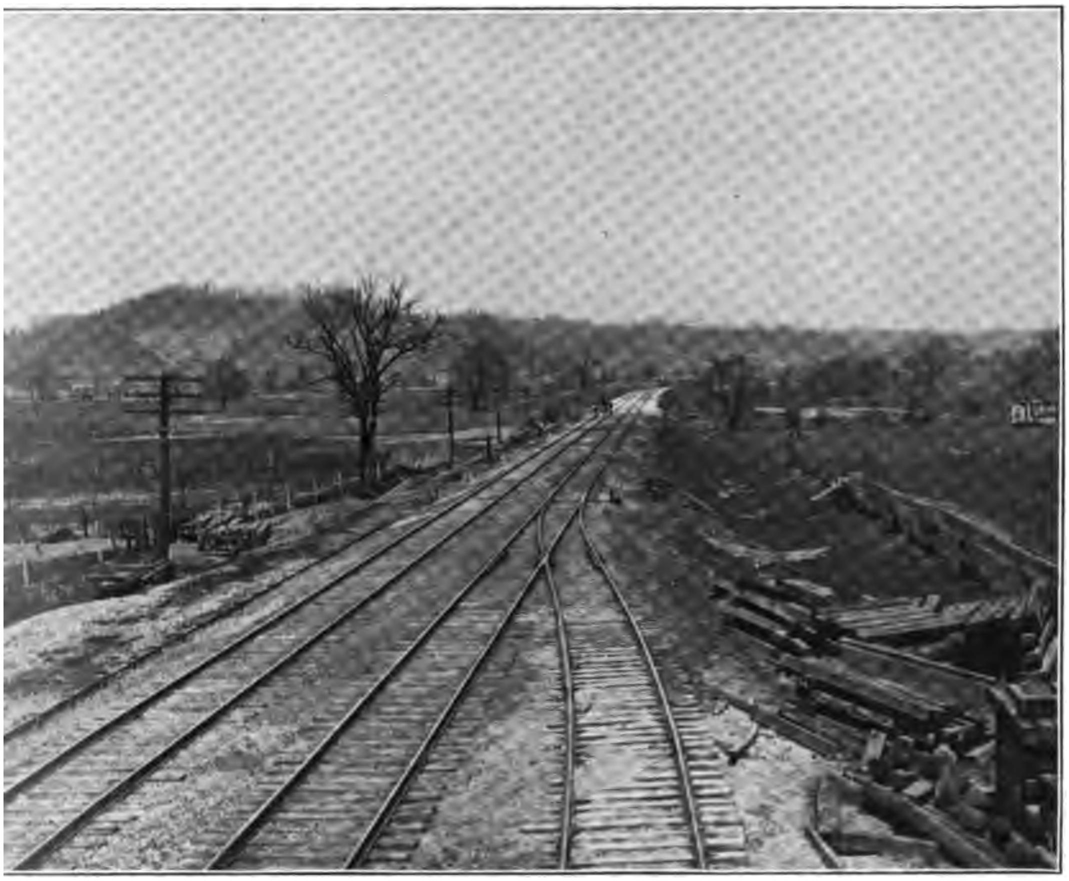


Ohio. April 21, 1913.

over Tuscarawas River. West approach fill washed out, and replaced with stone and riprap. Abutment slightly cracked.



ton, Ohio. April 21, 1913.

View east, showing track as replaced for regular service.

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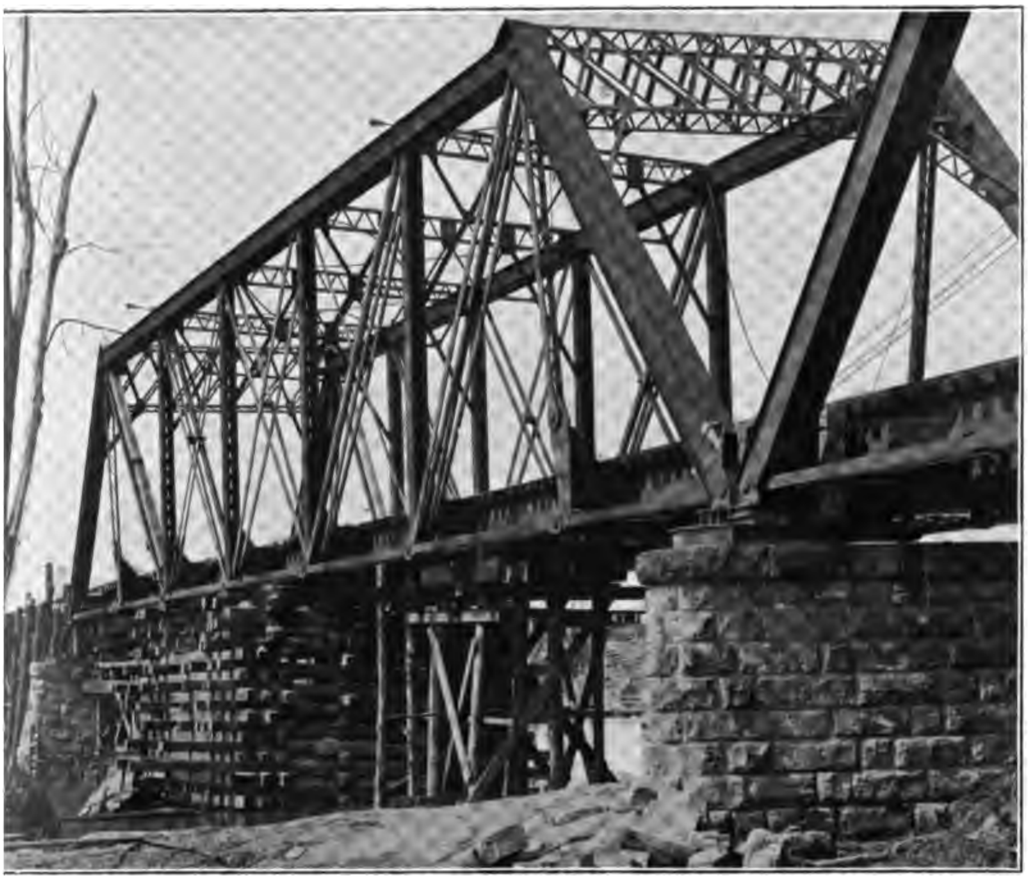
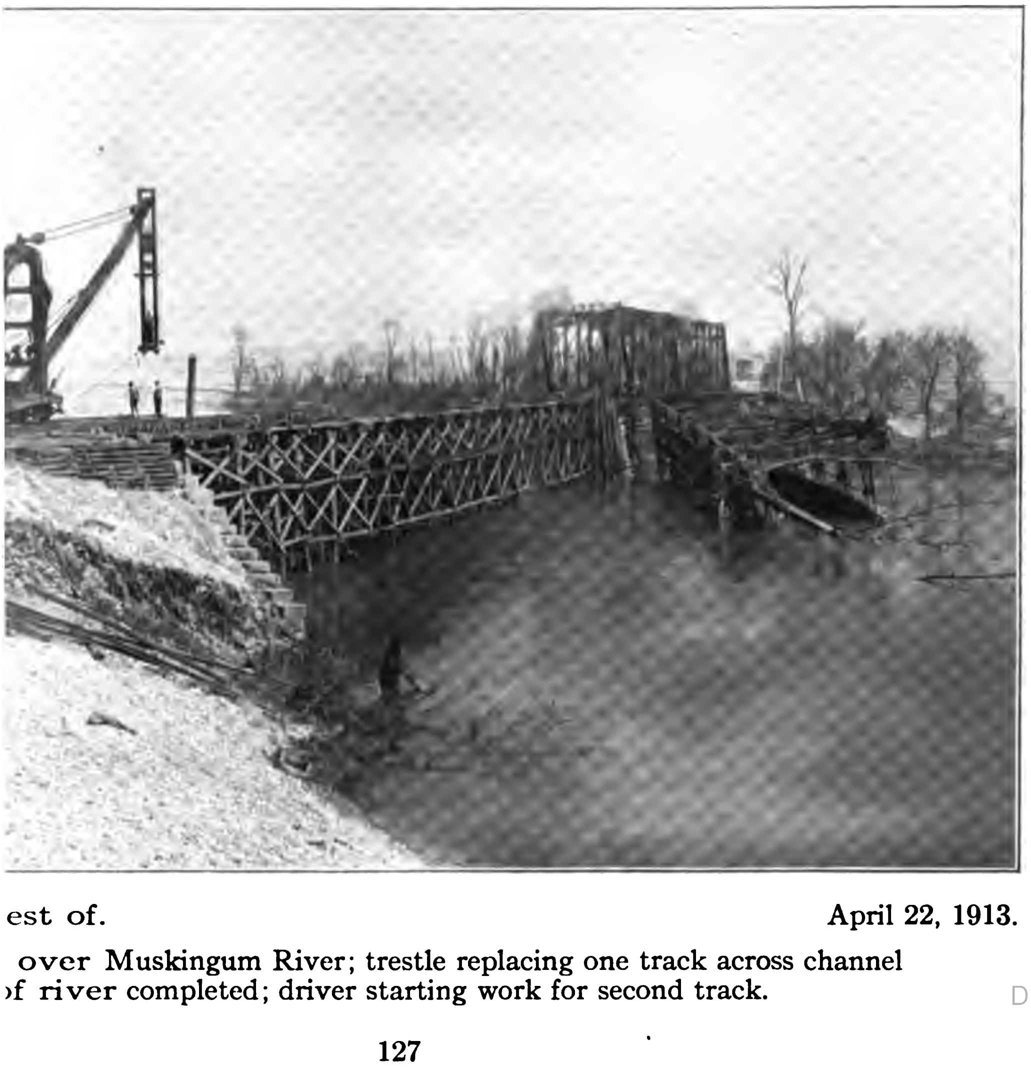


west of. April 22, 1913.

, over Muskingum River; second span raised and supported on timber falsework on account of undermining of pier.



est of. April 22, 1913.

over Muskingum River; trestle replacing one track across channel of river completed; driver starting work for second track.

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CHAPTER 19.

COLUMBUS TERMINAL DISTRICT.

INDIANAPOLIS AND CINCINNATI DIVISIONS.

damage in the Columbus Terminal district was done at one stroke, and repairs were made by the Indianapolis Division on both divisions, it seems et one account cover the whole situation.

o River flows eastwardly for about two miles toward Columbus, then south, separating Columbus into two parts, the main City on the east esidential section on the west side, which for convenience will be called s. Just before making the turn to the south, the Scioto River is joined gy. These streams occupy a low valley, and as every flood stage would Columbus, that section has been protected by levees where the fill of ailway does not answer that purpose. Through this district the rail- een raised in recent years to separate the grades of streets and railways. been carried on embankments and overhead bridges span the principal

in this instance, was called upon to carry about twice as much water s at the bridges would accommodate, and the result was that the levees ithin a short time. Their construction was not calculated to resist overflow, and these levees gave way very promptly. The fill of the ion then acted as a dam, with openings at each of the street bridges. fficient to pass the great quantity of water, and the force of the embankment away wherever there was an opening until a sufficient ovided. At the street crossings the current was so strong that it tore face and the concrete substructure and excavated holes ten or twelve naterial of the destroyed fill was washed far away; even the heavy ade up a large part of the gravel used for fill were carried hundreds wn over everything, sometimes even piling up in the houses several

rried many buildings from above down through this district, and d away innumerable residences through the whole of West Columbus. bled topsy-turvy everywhere; some were even left standing on were cut in two—one part being swept away, the other standing. nd debris were scattered over the whole landscape when the water

ur main washouts on the Cincinnati Division tracks:
the Scioto River Bridge and the Hocking Valley crossing.
t of the Hocking Valley crossing.
. & O. S. W. crossing.
ral Avenue, including the viaduct,
occurred in the same district, but they were not serious.

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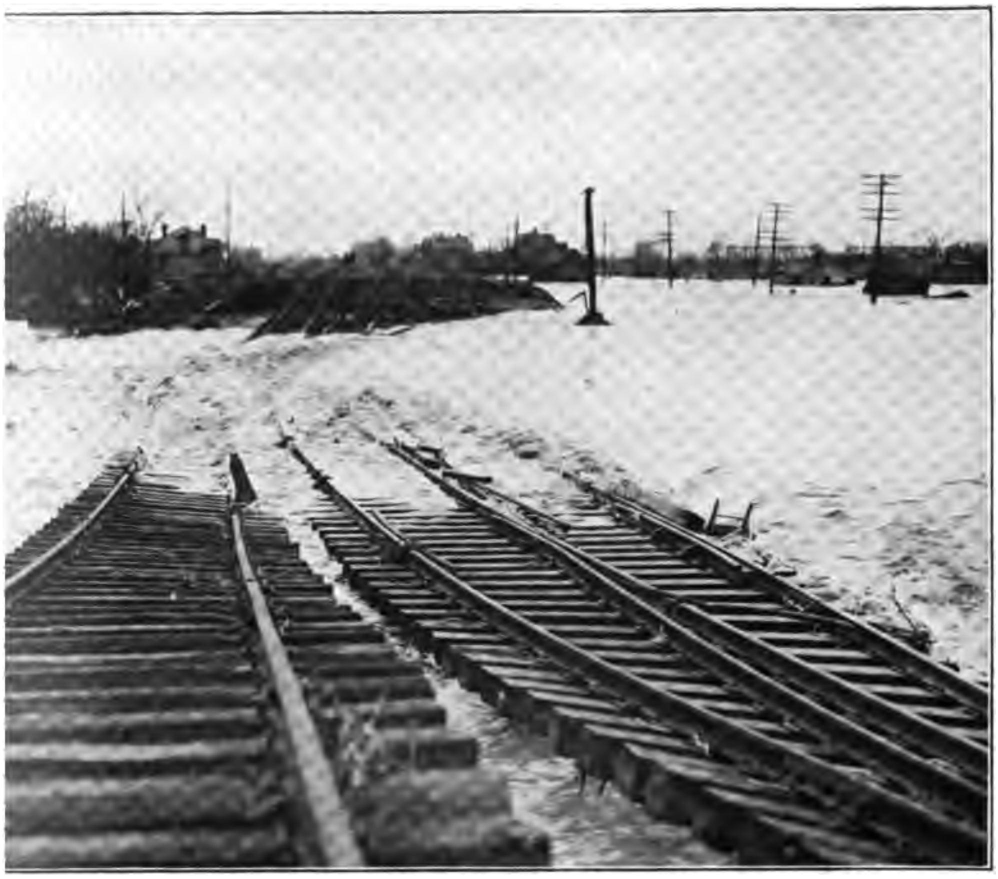
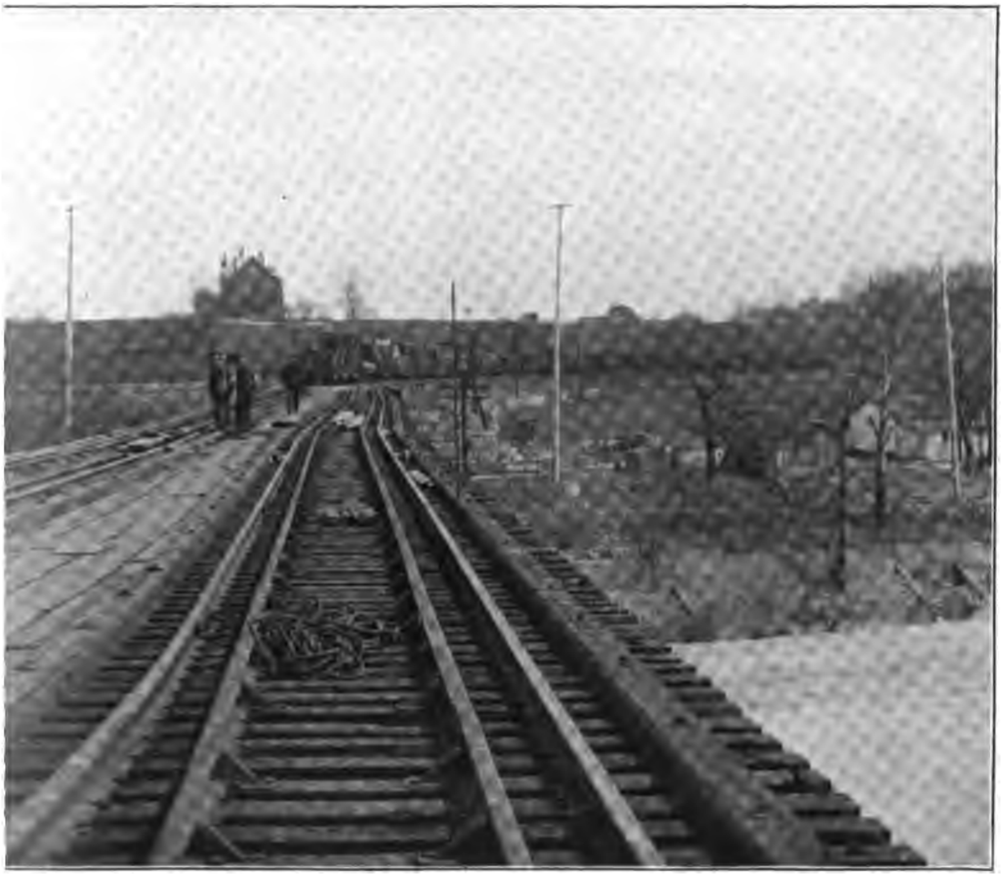


hio. March 26, 1913.

vision tracks, looking west from T. & O. C. crossing. Sandusky street bridge over Scioto River appears in distance at right.



April 1, 1913.

Bridge 3, over Scioto River, after west pier was undermined.

w weeks, work was started on a new bridge to replace Central Avenue viaduct, ıg a run-around track for temporary use.

Sandusky Street viaduct, the roadway under the bridge was partially filled , but the structure was not damaged. At Rogers Avenue, the south wing undermined by the deep scouring, and were repaired by filling in with con- tructure being otherwise undamaged.

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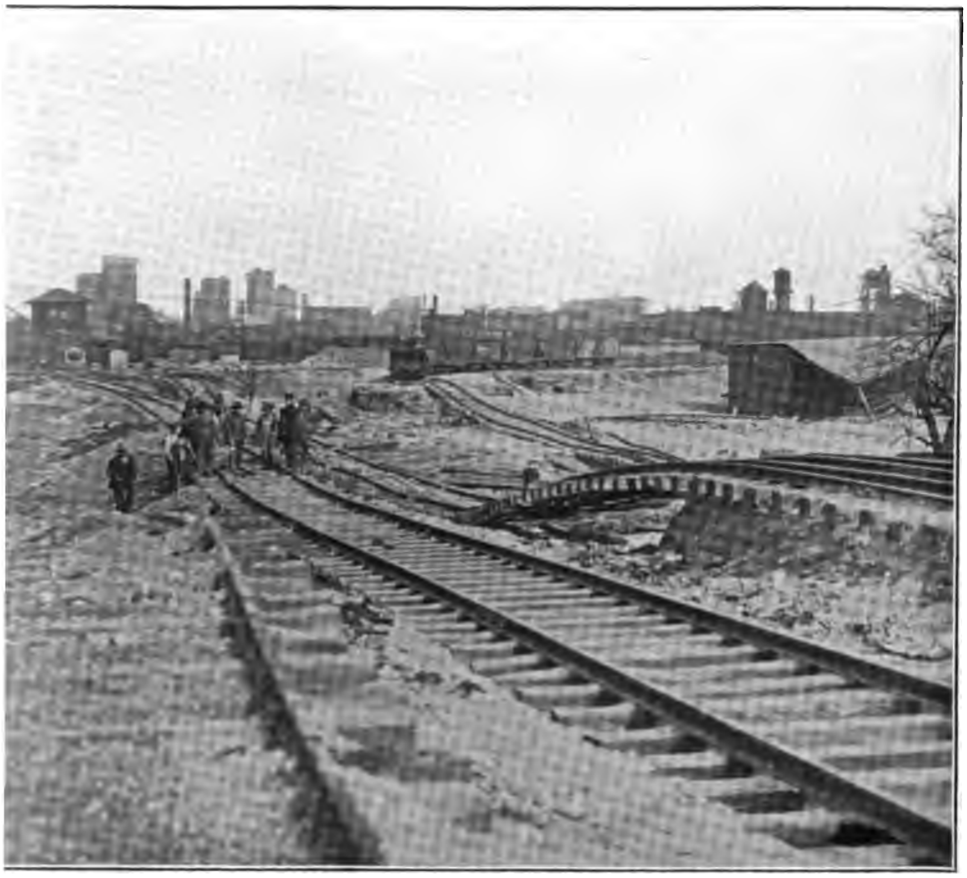
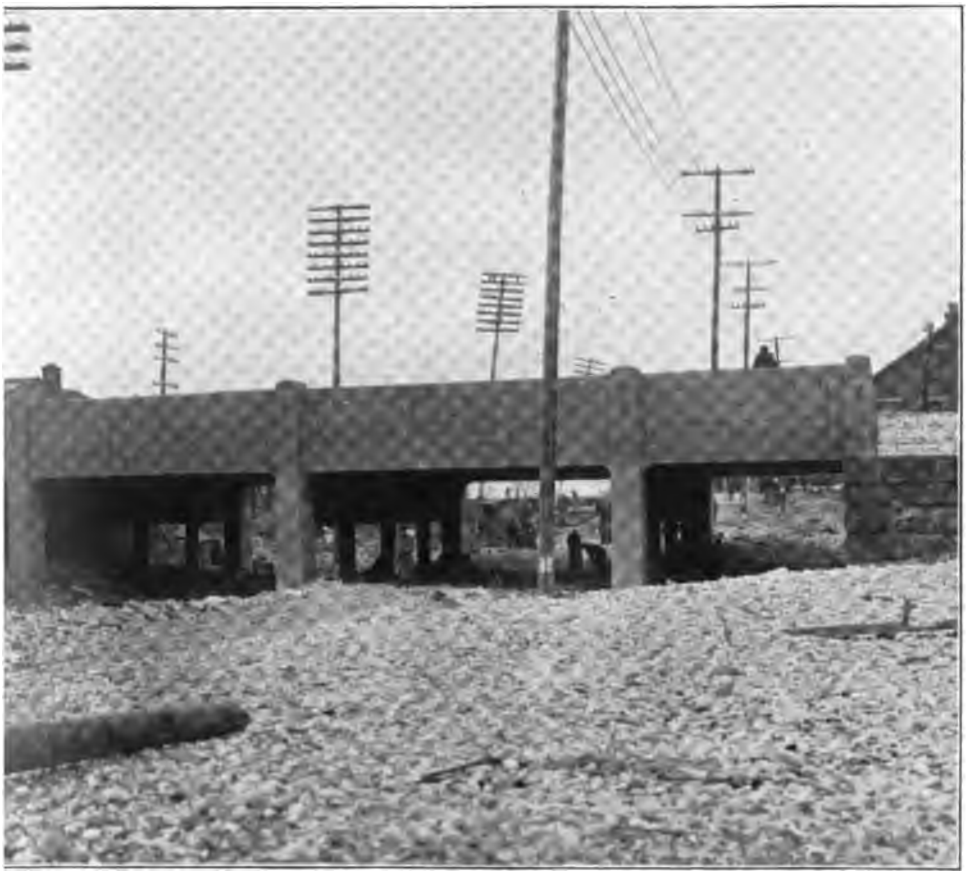


March 31, 1913.

ing east over washout west of Hocking Valley Crossing.



io. March 31, 1913.

Street viaduct, looking toward river channel, at point where levee as washed entirely away, taking large water main with it.

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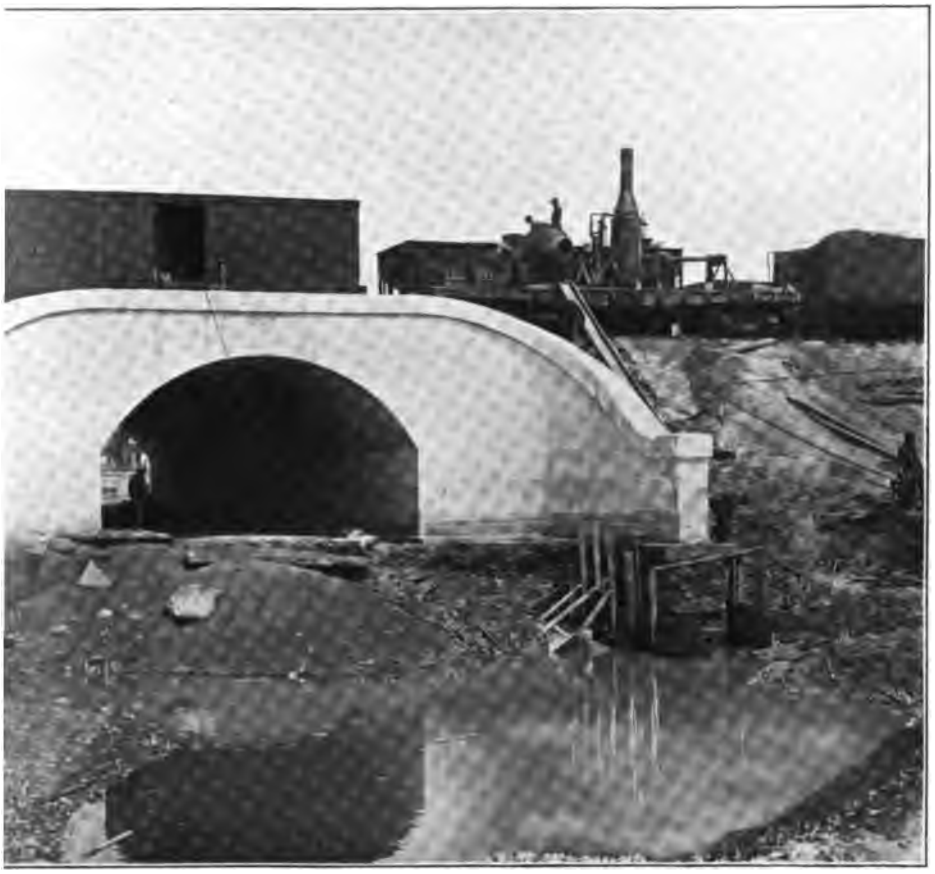
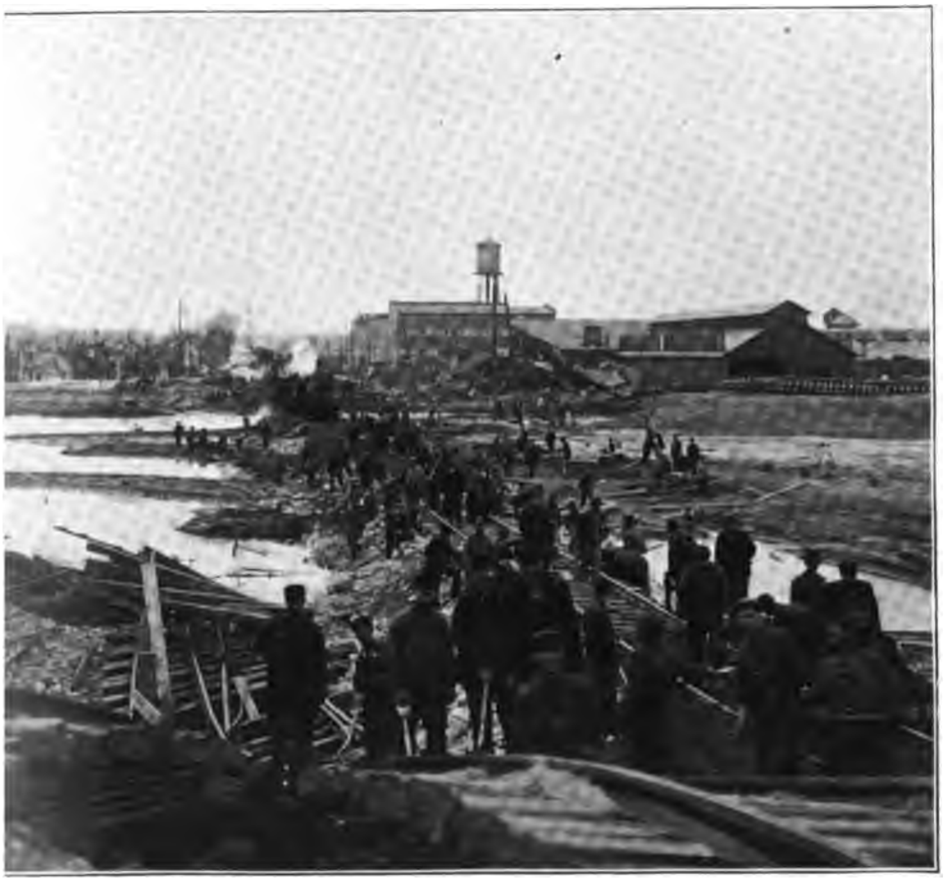


April 23, 1913.

: viaduct, showing condition of street pavement and subgrade
r viaduct. Foundations of viaduct being deepened.



March 31, 1913.

looking west, showing forces at work replacing roadbed destroyed.

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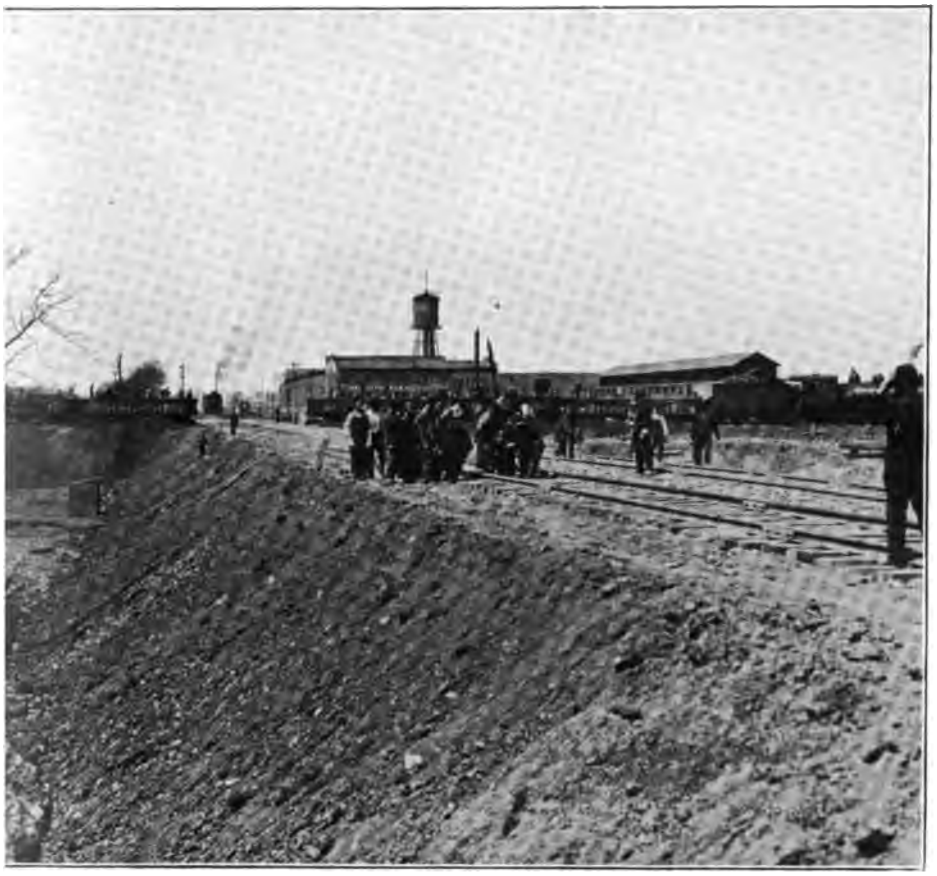
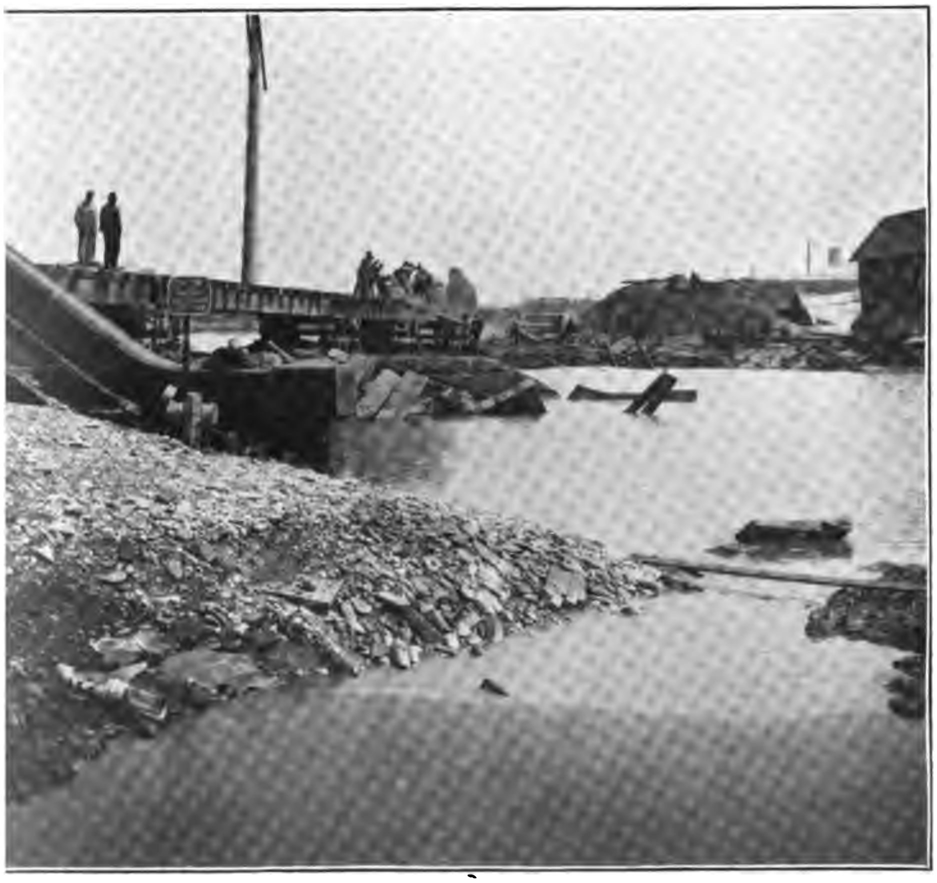


April 23, 1913.

ɔssing, looking west; ballasting new track for resumption of service at regular speed.



March 30, 1913.

owing Central Avenue viaduct being replaced with cribbed trestle, preparatory to making temporary fill.

CHAPTER 20.

INDIANAPOLIS DIVISION.

dianapolis Division runs at right angles to the drainage basins, and the
ained was to bridges over the streams it crosses. The portion of the divi-
bana west to Richmond lies but a short distance south of the main divide,
also in the belt of heaviest rainfall, it was here that the flood first affected the
Lines.

the Miami River, and near Richmond the East Fork of the White River,
he track level early on the 24th of March, and by night all the streams
cedented flood stages. The track was badly washed out at New Madison,
ing the night a work train was started from Bradford Junction to make
y had gone but about seven miles when Bridge No. 58, a stone arch over
or "Dry" Creek, near Gettysburg, Ohio, went down with the rear of
heavy engine and three cars having crossed in safety. The foreman and
ere drowned; 14 other laborers, the conductor and two brakemen were
injured were taken to Greenville and cared for until a detour route could
et them to a hospital at Piqua.

he same time, on account of washouts west of Urbana, train No. 3,
ago, was detoured north over the Big Four Railway, to be taken to Union
returned to the Pan Handle. As it pulled over the Mad River bridge at
e same stream which had caused the trouble west of Urbana, the bridge
the engine and one car. The train having been reversed in delivering it
the engine was backing, and the car next to it was the Columbus-Chicago
gineman, fireman and pilot were on the engine. The first two got ashore
juries. The pilot was washed down the river but was able to cling to
alf a mile down stream, from which he was rescued after daybreak. One
rested on the bank, and the other end swung around until the car rested
g the river bank. Several passengers were slightly injured, and a
was riding in the end of the car next the engine, was killed or
body was not recovered for several days.

vere provided with blankets from the Pullman cars, and food supplies
om the express car for the passengers, for the track had been washed
rain, so that it was impossible to reach it from either side. It was
arch 25th), when a relief train succeeded in getting within a mile and
at the passengers, including the injured, could be transferred to this
back to Urbana. Part of the crew was left in charge of the
eturned to Urbana on the afternoon of the 28th.

he Indianapolis Division, cut into many pieces, found on its hands
arooned at outlying points, with twelve more at Columbus terminal,
d; and fourteen freight trains marooned at outlying points. Three

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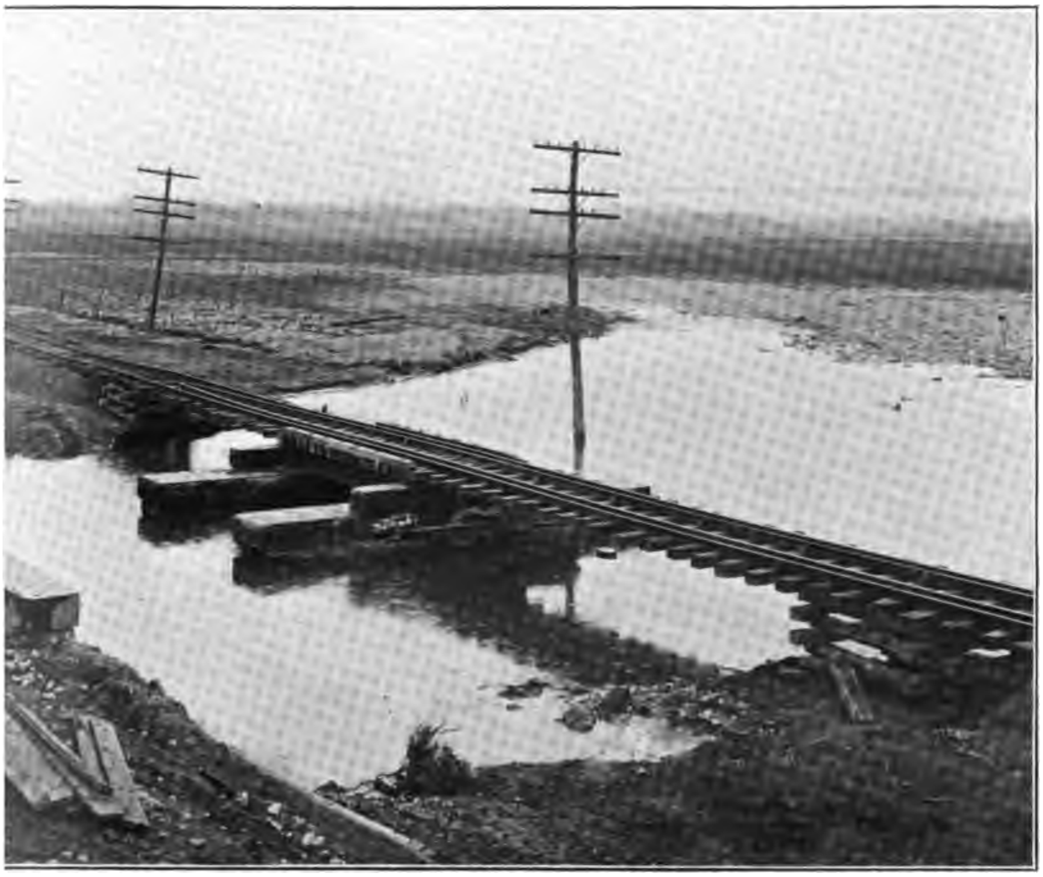
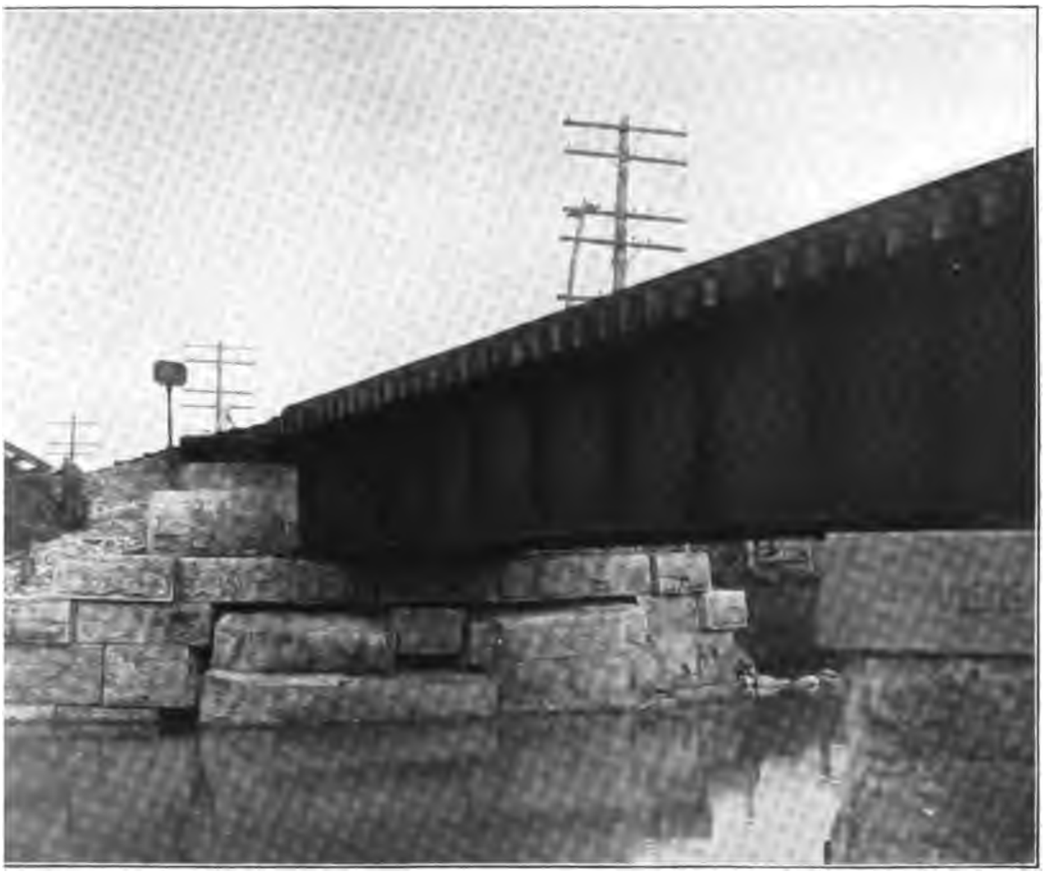


ʼest of. April 2, 1913.

No. 37, on old line, approaches washed away, abutments undermined.



miles west of. April 2, 1913.

at Bridge 39, over Spring Creek, showing undermined abutment.

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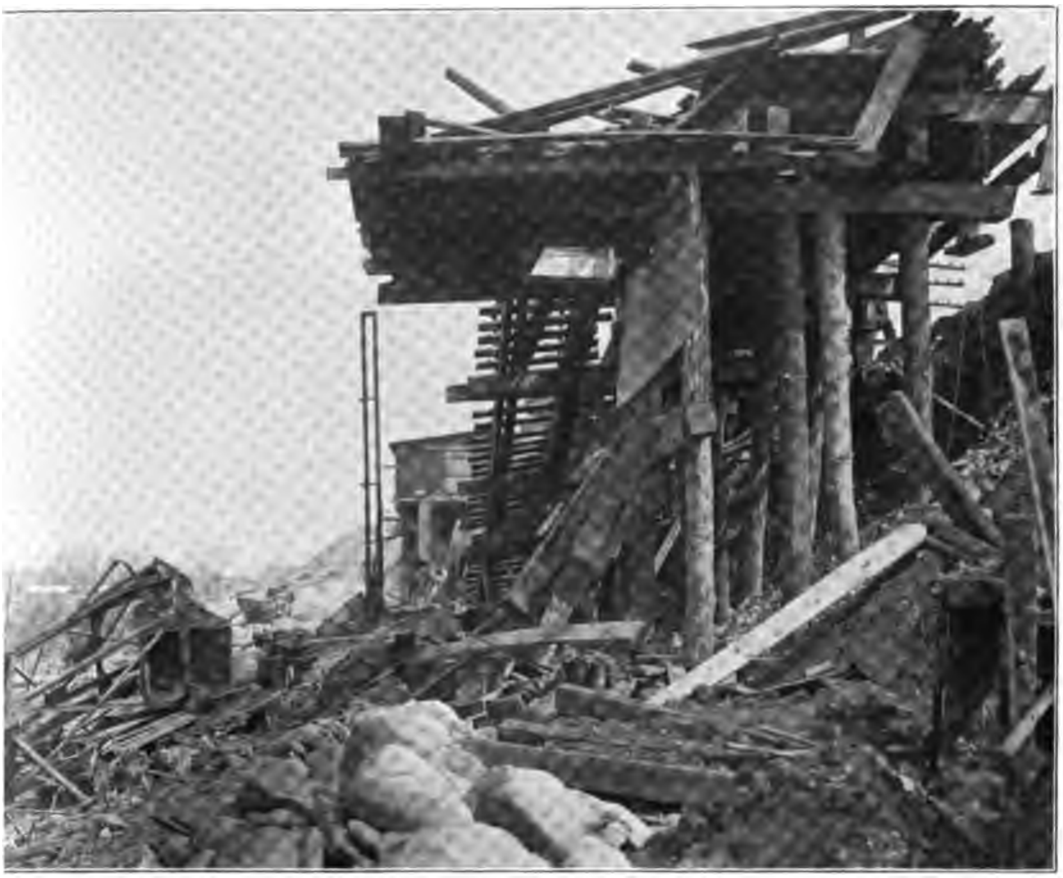
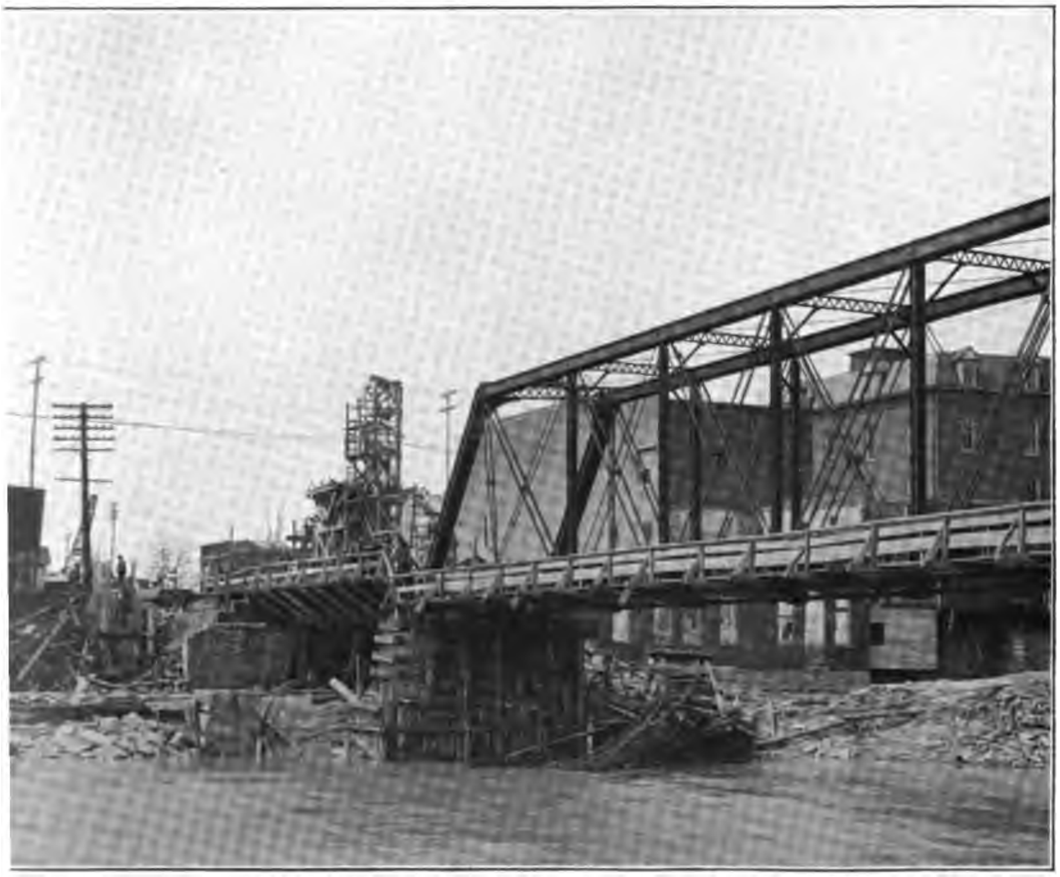


April 2, 1913.

Looking east from Bridge 50, showing ruins of contractor's outfit engaged in track elevation work.



April 2, 1913.

est pier of Bridge 50, over Miami River and Canal. Bridge itself intact.

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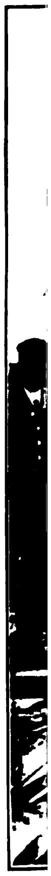

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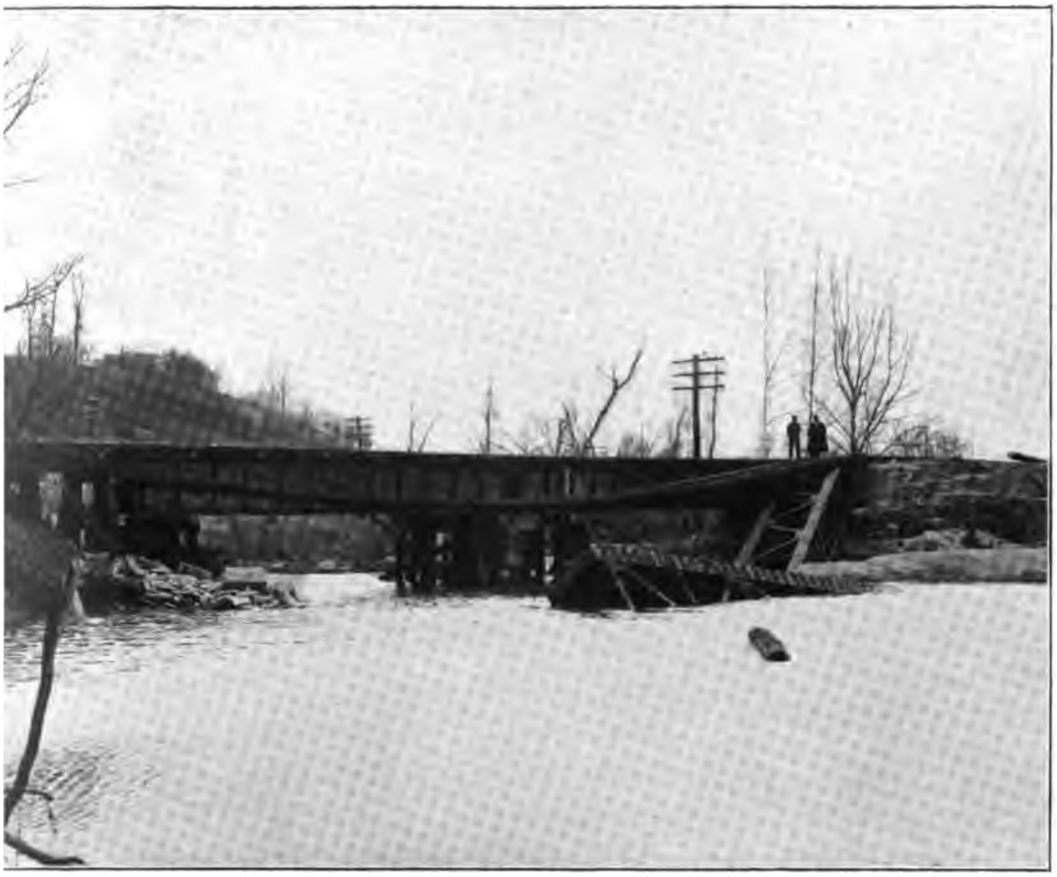
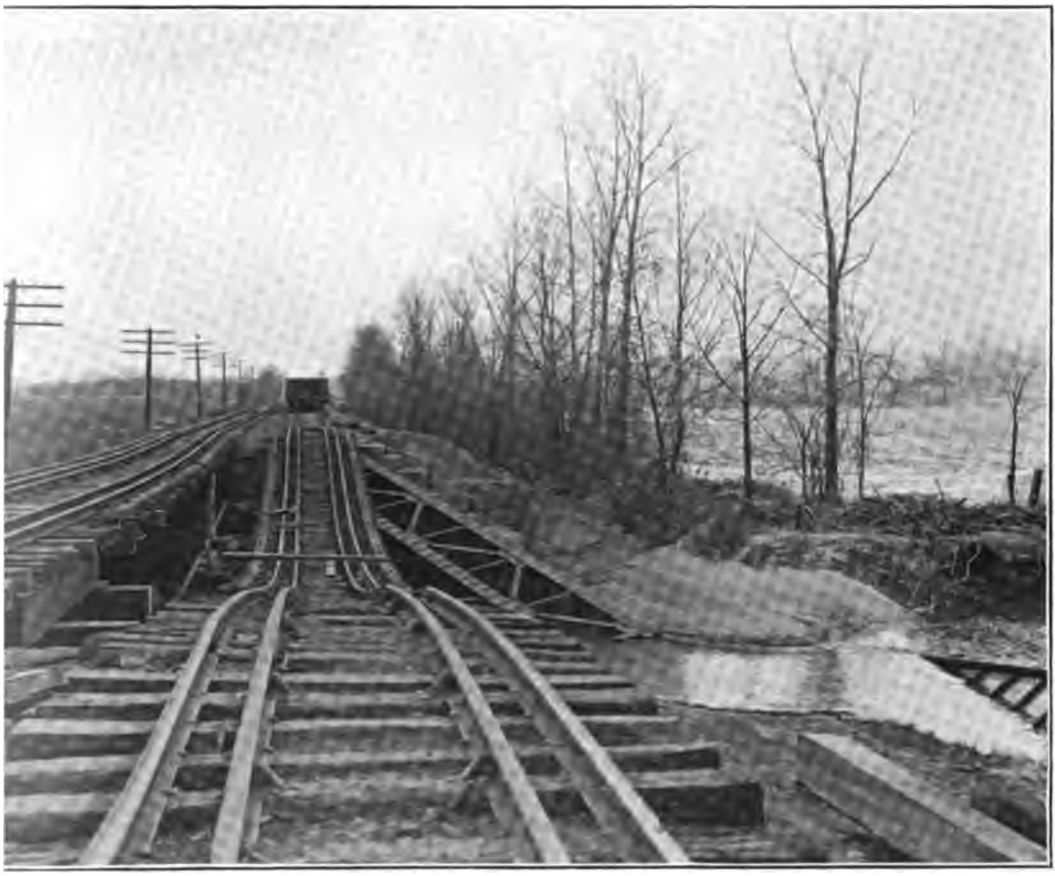


o, west of. April 3, 1913.

92, over East Fork, White River, looking north. Double track bridge built separate structures, one of which was destroyed; other only damaged.



April 3, 1913.

No. 92, over East Fork, White River, showing one track replaced for slow speed service, the other without support.

New

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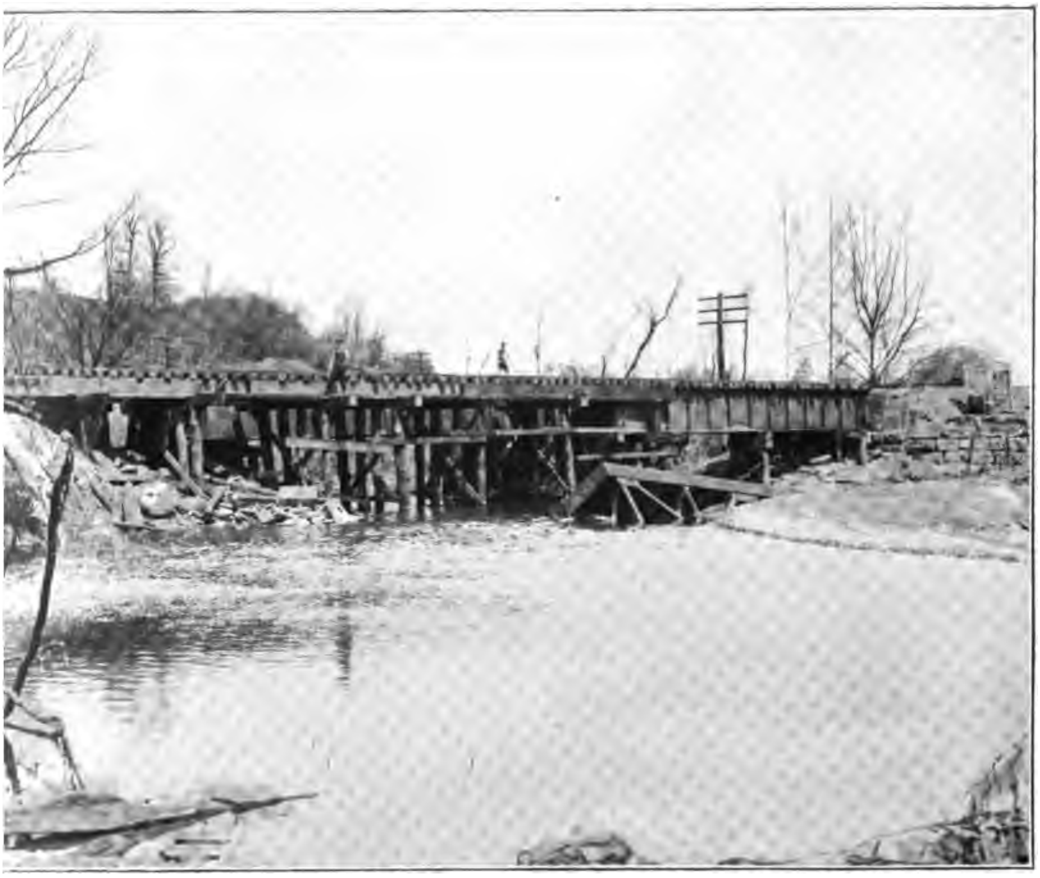
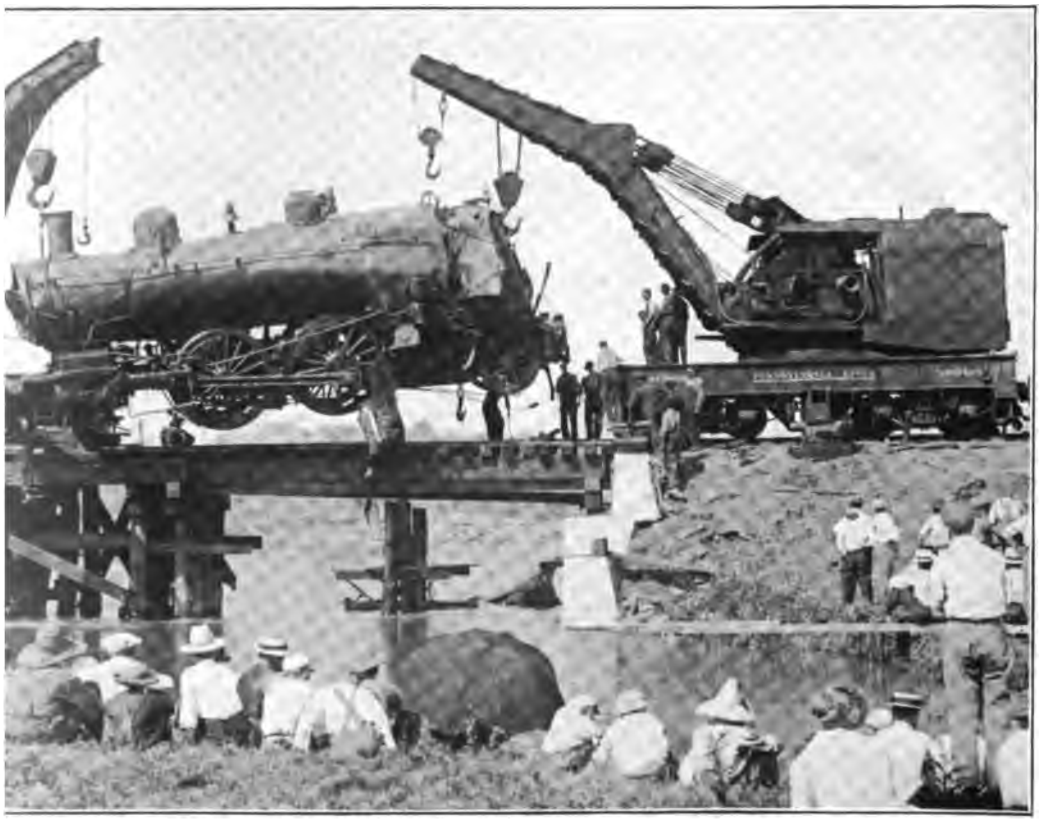


, west of. April 25, 1913.
o. 92, over East Fork White River (separate structures for two tracks),
h girders of north bridge supported on timbers, and part of south
bridge replaced with temporary trestle.



. August 13, 1913.
engine of No. 3 of March 24-25 from Mad River at West Liberty,
ig Four Railway). Piling for temporary bridge had been driven
hrough trailer and ash pan of engine, and it could not be
raised until these piling could be withdrawn.

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CHAPTER 21.

CINCINNATI DIVISION.

ton, Ohio, where the Cincinnati Division crosses the Miami River, was the ufferer from the flood. Ninety-eight lives are known to have been lost, and a f persons have not been accounted for since the flood. The total property een officially estimated at from $100,000,000 to $130,000,000. Dayton was the center of public interest and relief effort all through the flood period, many other towns suffered equally in proportion to their size.

he line of the Cincinnati Division between Columbus and New Paris, via yton was the only point where serious damage occurred, but on the Little d from Xenia to Cincinnati, most of the track was under water and much eriously damaged, as the tracks lie low in the valley of the Little Miami River f the distance.

e night of March 24th, No. 301 was stopped at New Paris by washout of on the Indianapolis Division, and before the train could be started back, ehind it at Brinley and West Sonora blocked the road, so that it had to stay is. No. 13 was at Dayton, and the C. H. & D. were asked to detour it to from which point it was planned to take it to Richmond over the Richmond Before the train could be started the C. H. & D. line was broken; and the as asked to take it to Cincinnati and Indianapolis over their line, but just was ready to leave this line was broken, and No. 13 was caught at the ion Station by the rising waters.

ton the Miami River is joined by Mad River and Stillwater River, and uilt on level ground surrounding the junction of these rivers, only a part ntial section being on the surrounding higher ground. These rivers have oward the city, and the valley which takes their united waters south, the i River, is comparatively narrow. All these streams were soon filled to and the erosion of the levees was very prompt. The city was inundated ibly short time. Forty minutes from the time the water reached Main six feet deep in the stores, and continued then to rise gradually until to fifteen feet deep all over the city. Most of the inhabitants were ir places of business or in their homes, and were almost immediately driven und floor rooms. A considerable portion of the residence section west as built up of one-story dwellings, and many of the people caught in them ves only by breaking their way through the ceilings and then the roofs, s were marooned on roofs and in attics for two or three days. The cold and on the morning of the 27th there was considerable snow, and was awful.

of communication were cut off and only rumors could be had as to actual ire broke out in many places in the town and destroyed two whole blocks

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heart of the city. While rain prevented the spread of flames in the residence , and but few dwellings were burned, the report that the city was afire, with the ants cooped in the buildings and without means of fighting for their lives, filled ntry with horror.

the 26th, the water was still too high everywhere to permit of any repair work Division, and the time was spent in preparation for work as soon as conditions ermit.

March 27th, the Weather Forecaster at Cincinnati predicted that the following ld find the water so high in the Ohio River as to force the abandonment erminal at Pendleton Shop. Arrangements were therefore made for a temerminal near the Terrace Park gravel pit, for use of work trains, and during the work of repairing tracks at points where the water had receded sufficiently en well under way.

he meantime, it had been definitely ascertained that all or a portion of the Union Bridge over the Miami River had been swept away. The bridge being perty, and all available equipment being needed elsewhere, it was arranged Big Four should take charge of trestling the river, and they commenced work 0th.

he 28th, the Ohio River at Cincinnati continued to rise, while the other rivers out usual flood stage.

he relief of Dayton's need, a force of mechanics was organized at Columbus sent to Dayton to assist the authorities in whatever might be most needed. e equipped with provisions for five days, and such tools as it was thought useful. Upon their arrival in the evening, they found that under martial e could stir from 6:00 P. M. to 6:00 A. M. and they did not get an assignment norning of the 29th, when they were asked to assist in restoring water and ities. The city pumping and power plants, which had been submerged, were debris and from six inches to a foot of mud covered the floors, machinery, etc. The buildings had to be cleaned first with shovels and wheelbarrows, ery taken apart, cleaned, and reassembled. By 10:00 A. M. of the 30th, e started in the water works, and as the source of supply was wells, which n contaminated, water was soon available wherever the mains had not been y evening of the same day, the 4th Street electric light plant had been restored On the 31st, a gang worked on the Third Street electric plant, until they ed about 3:00 P. M., while another gang assisted in replacing bridges. At as found that they could be of no further practical assistance and returned to

is time, it was learned what had become of the passengers on No. 13, een marooned at the Dayton Union Station. The train arrived at Dayton , March 24th. The water entered the train shed at about 7:45 the next such volume that it was seen to be impossible to get the passengers out and it was accordingly pulled west toward the bridge, where the tracks eet higher. A Big Four train also pulled alongside. About 4 P. M. the p to the floor of the sleeping cars, and debris lodging under No. 13 prevented As the water was still rising, the passengers and baggage were transferred our train, which was backed to the station and the passengers and fiftyho had been rescued from floating houses, trees, etc., were assisted from the

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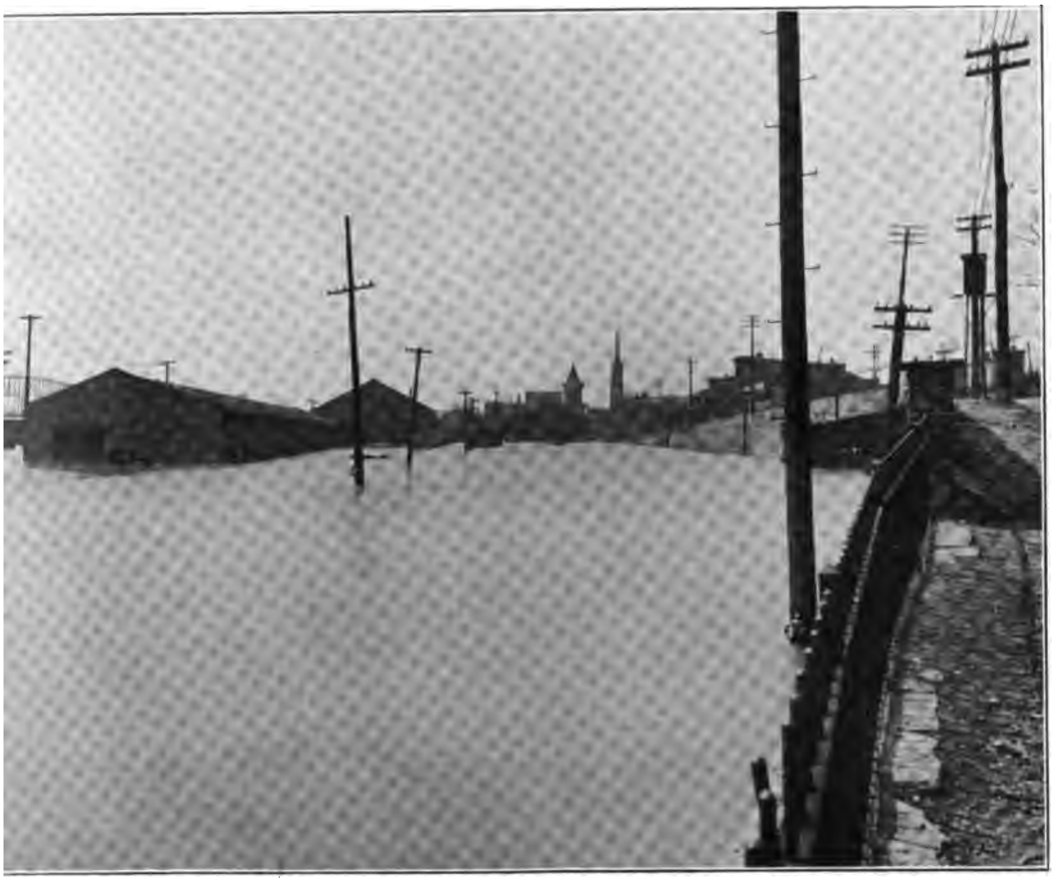
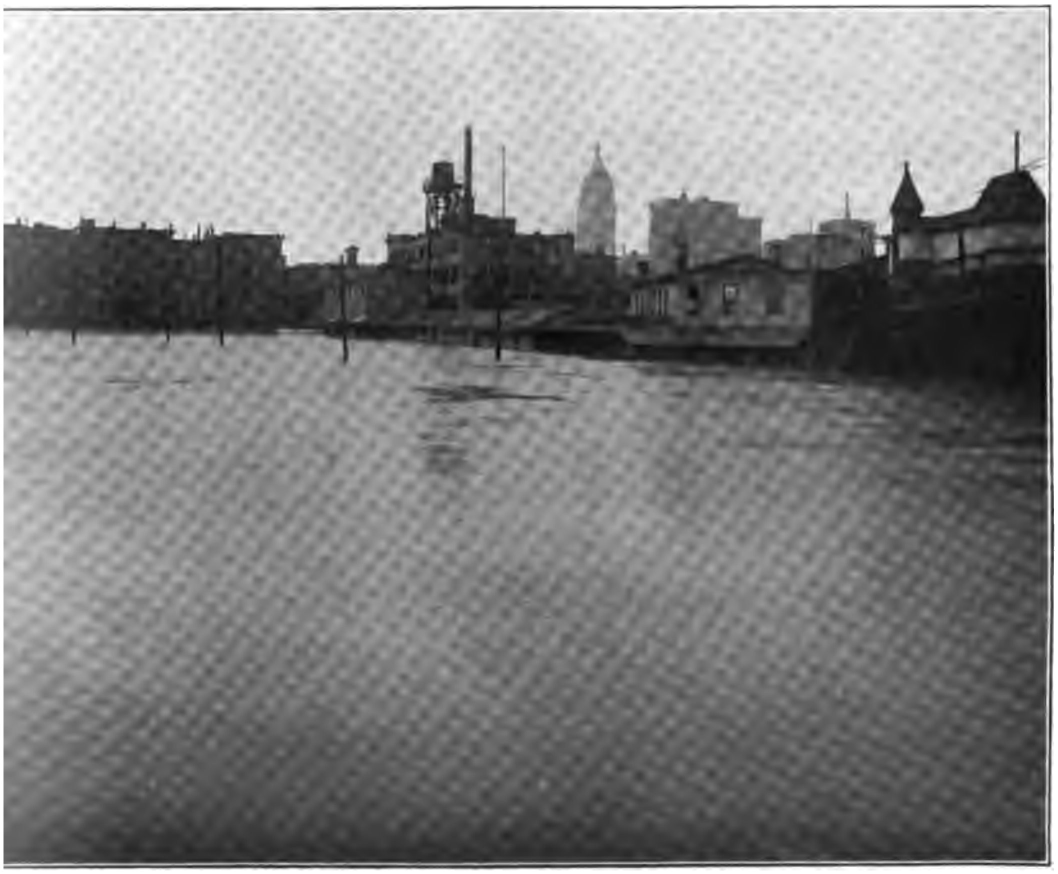


o. March 31, 1913.

tion Yard, from Point Isabella. Train shed in distance at right of center.



March 31, 1913.

ront Streets, looking west, at Broadway Yard and Fruit Auction House.

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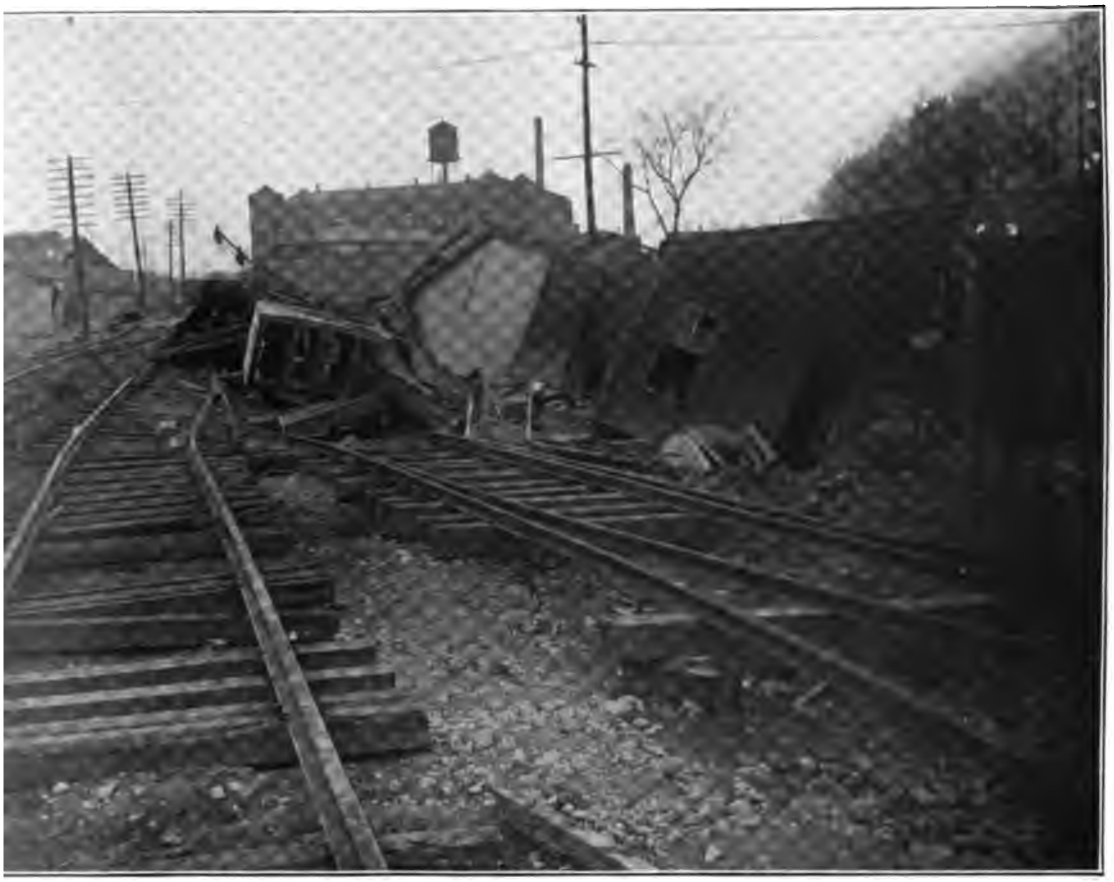
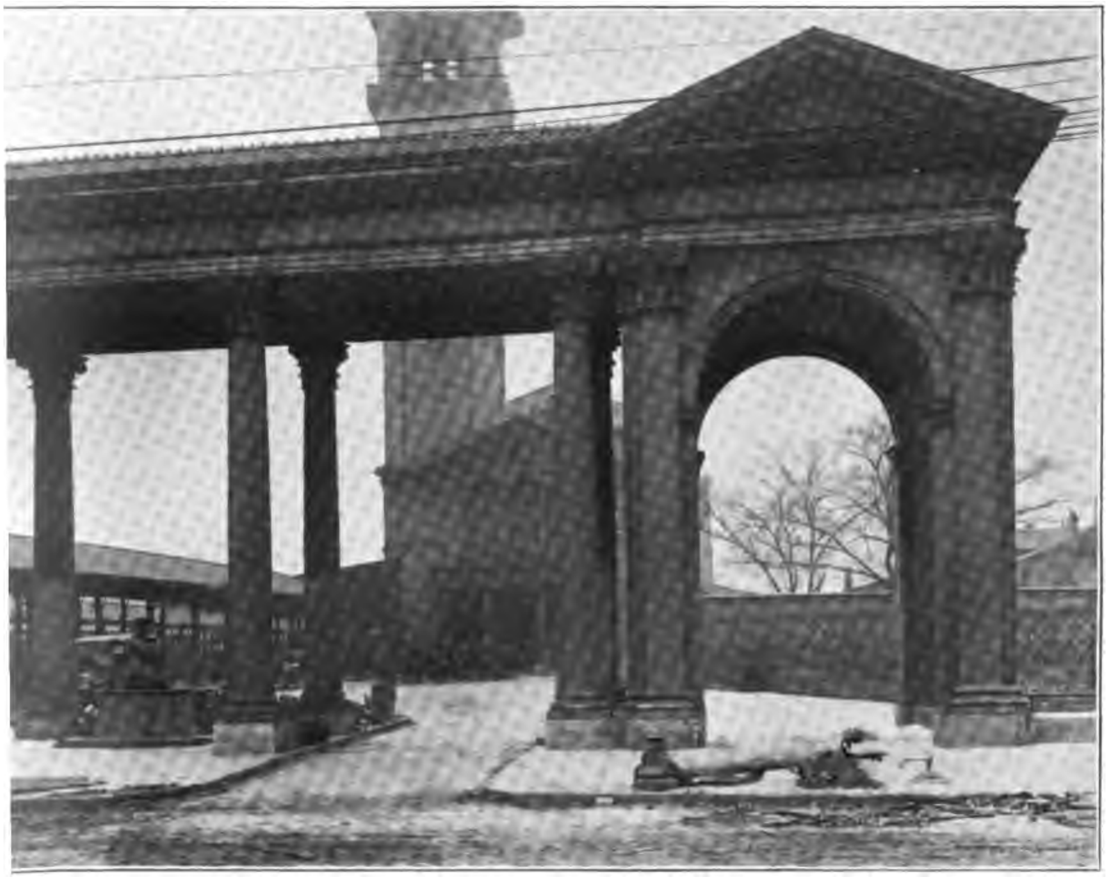


io. April 1, 1913
ew of joint tracks just west of Dayton Union Bridge. Similar conditions
existed east of the bridge, also, for a mile.



ɔ. April, 8 1913.
ɛ to Union Station, at east end, showing high-water record on columns. The
ɛn lamp post is typical of destruction of lighting facilities, except that this
t has been turned to up-stream side of its stub to clear the driveway.

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CHAPTER 22.

RICHMOND DIVISION.

h the Richmond Division was one of the first to feel the effects of the flood,
epaired as promptly as its own conditions would have permitted, because
ore important to open up first the through lines from east to west, and as
between Richmond and Piqua could not be reached from the east, the forces
nond Division were sent there before making repairs on their own Division.
rch 24th high water began to cause trouble, but the slight damage done
l within a few hours. About 2:00 A. M. on the 25th, Bridge No. 81, over
of Campbellstown, was washed out on one side so that the deck girders went
end, and the line was broken. Three passenger trains, Nos. 45, 1, and 9, were
ork train when this point was reached. In the early morning the passengers
ins were transferred across the damaged bridge and taken to Richmond.

the day Seven Mile Creek, in the valley of which the Richmond Division
ton, Ohio, south to Hamilton, rose to an unprecedented height, destroying
s and considerable track in that district. Telegraph lines were destroyed
time, so that it was impossible to ascertain exact conditions. The Great
r at Hamilton likewise came up on the 25th to an unprecedented height,
almost the entire city. Here the damage done was even greater in propor-
size of the town than at Dayton, and the number drowned was almost as
otal deaths due to the flood being 85. The C. H. & D. bridge over the
r, which is used jointly by the Pennsylvania Lines, was the only bridge left
ross the river. Water was seven feet deep in the waiting room, and as it
thout warning, a large amount of freight in the freight house and cars was

26th, Bridge 81 was repaired for temporary use, and the carpenters sent
idge 57, a two span truss bridge over Seven Mile Creek, west (or north) of
the pier and one abutment of which had been undermined and destroyed, the
tructure dropping into the creek. Before much progress could be made
t toward building a run-around track, the men were sent to Bridge 92, on
polis Division west of New Paris, which they succeeded in opening for
turday March 29th. From here they were sent to Bridge 50, at Piqua,
point they did not return until April 2d.

meantime, a gang of bridge carpenters from the Chicago Terminal Division
l and started work on the 30th at Bridge 57. They were joined by the
Division gang on April 2d late in the afternoon, and the trestle was completed
, a day having been lost in returning to Bridge 92, west of New Paris, which
ed by high water following heavy rains on the 3d.

2d of April, a land pile driver, which had been used in making the first repairs
2, was taken to Camden, and from there hauled by wagon to Bridge No.
an through truss bridge over Seven Mile Creek, the pier of which had been

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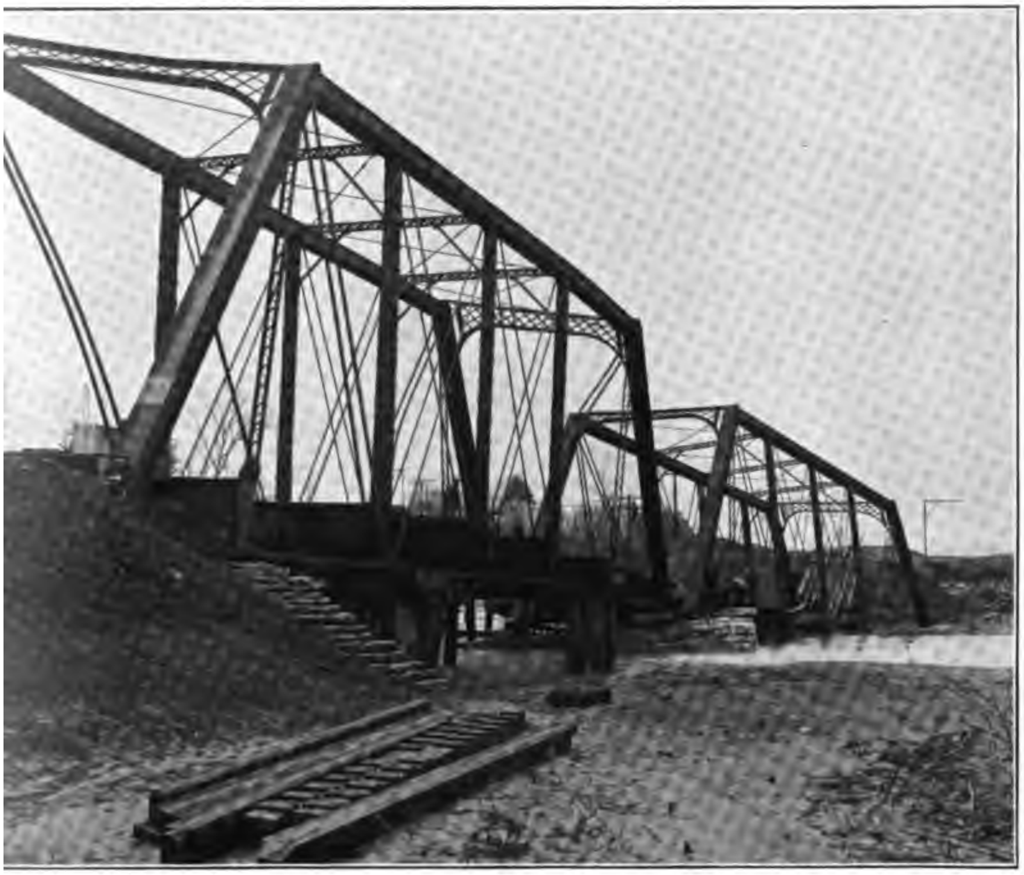
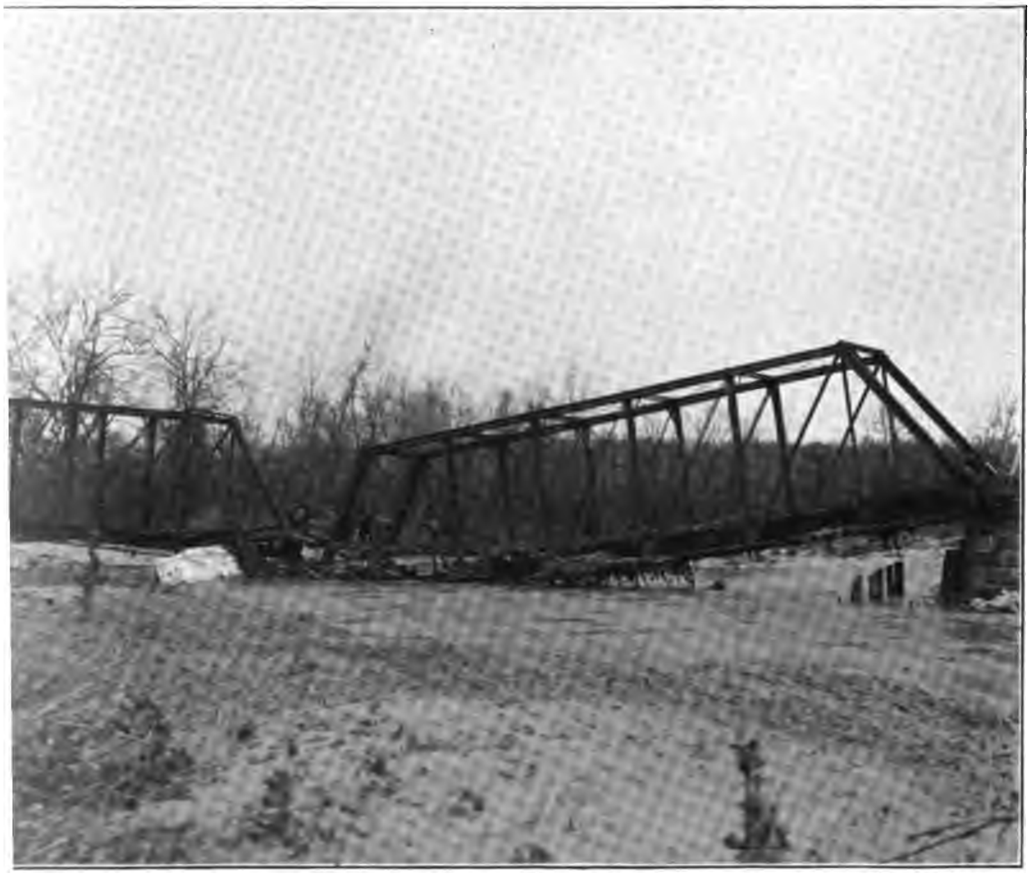


west of. April 4, 1913.

idge No. 57, over Seven Mile Creek, showing pier undermined and east abutment destroyed.



ast of. April 4, 1913.

48, over Seven Mile Creek, looking north, showing pier undermined.

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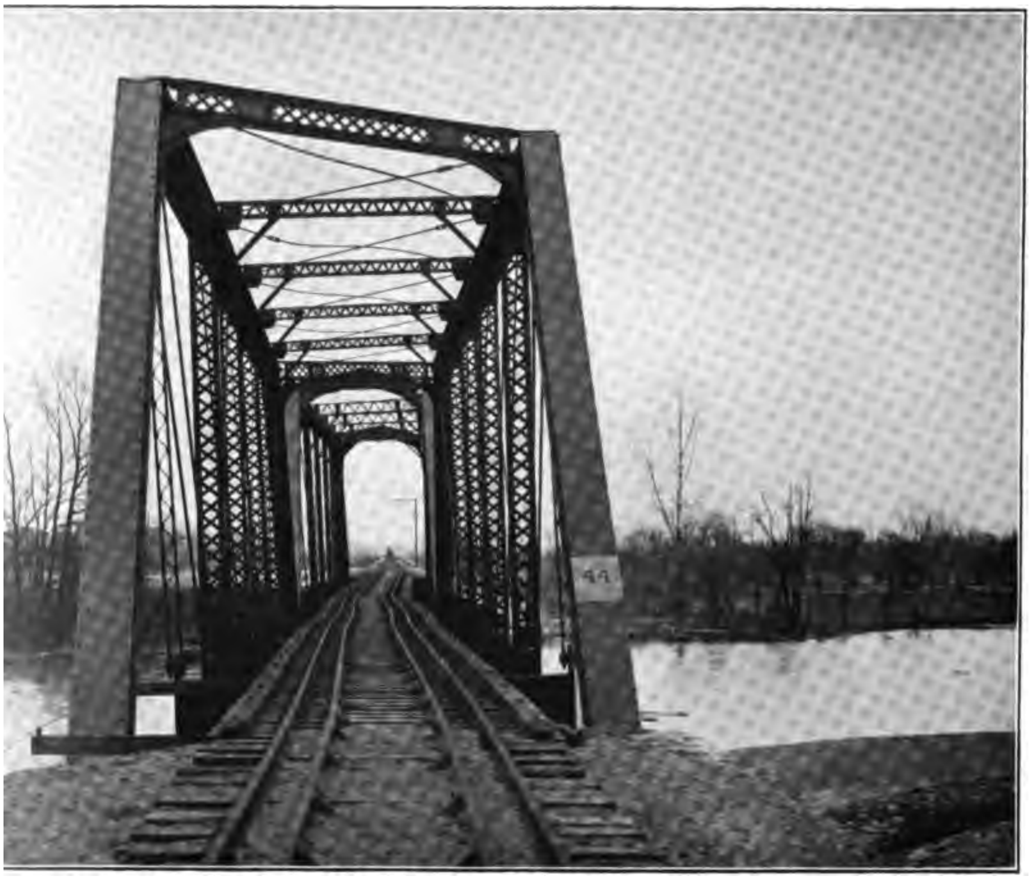
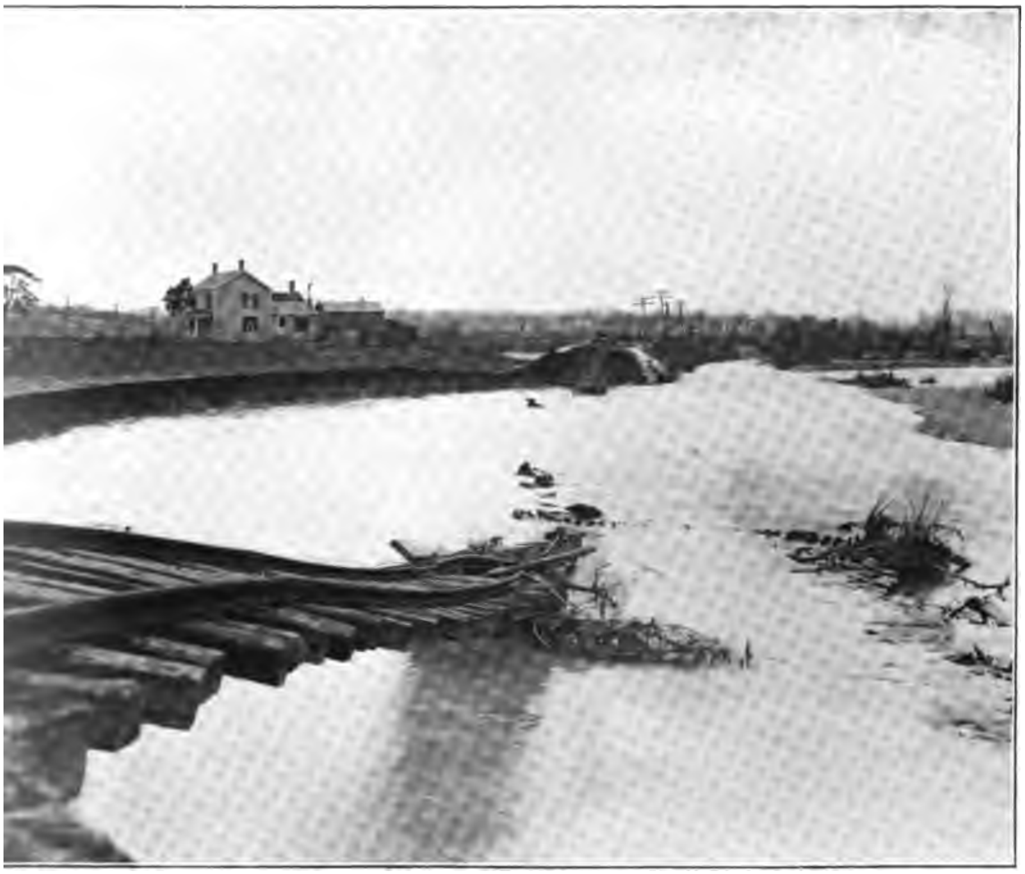


April 4, 1913.

e No. 44, over Seven Mile Creek, looking east, showing deflection of Bridge due to undermining of pier.



April 4, 1913.

ıg west over washout one-half mile east (south) of Collinsville, along Seven Mile Creek.

Camden, Ohic
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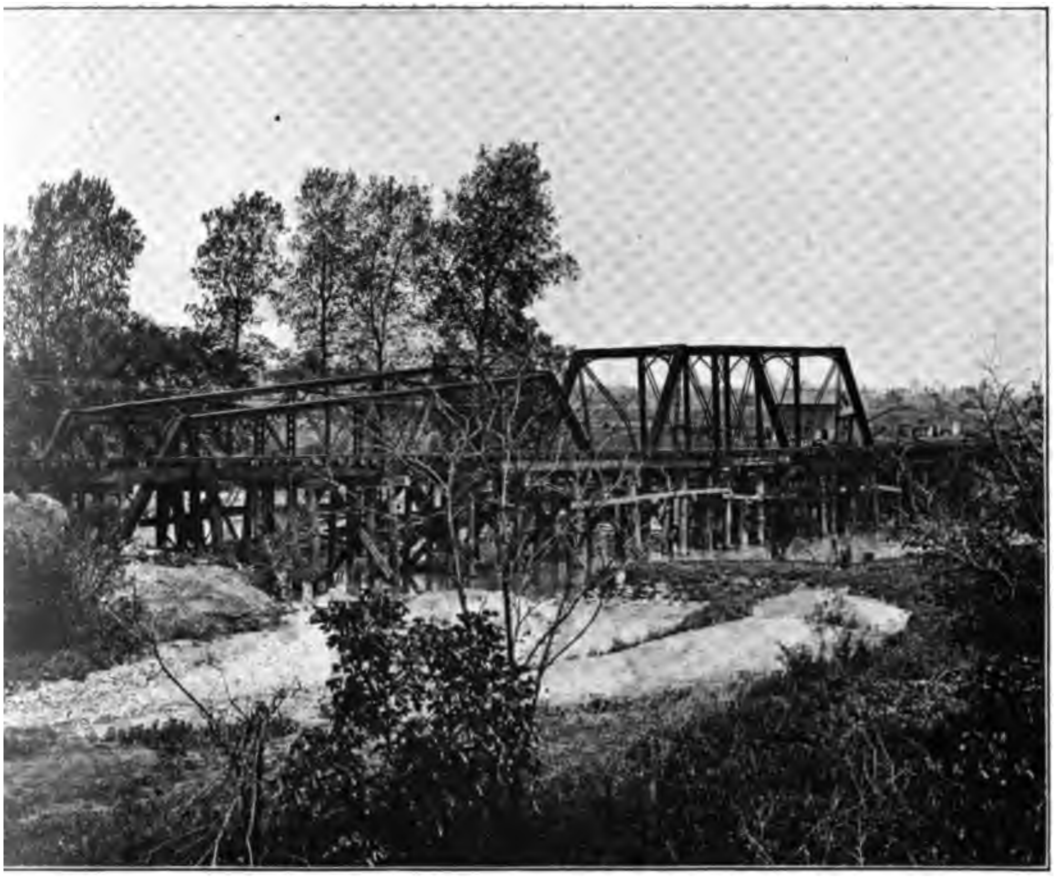
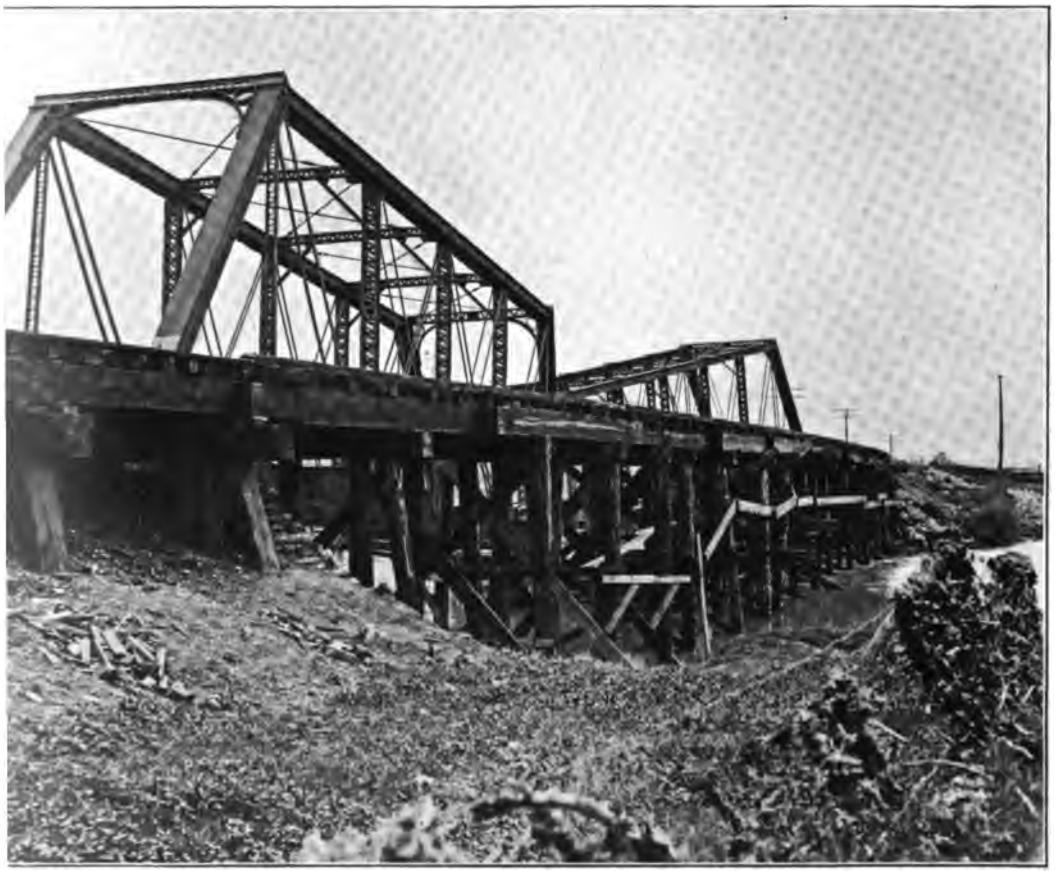


east of. May 14, 1913.

ge No. 57 over Seven Mile Creek, looking south, showing temporary trestle replacing bridge.



ast of. May 14, 1913.

ridge No. 48, over Seven Mile Creek, looking east, showing temporary trestle replacing Bridge.

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CHAPTER 23.

LOGANSPORT DIVISION.

e Logansport Division encountered serious trouble at Logansport and Muncie. r points there was minor damage, but delays to traffic resulted from the high .t these two points only.

Logansport, the Division crosses the valley of the Wabash River, all tracks, ;s, shops, etc., being in the immediate river valley. At 3:30 A. M., on March e water reached the tracks at the passenger station, continuing to rise until .oon on the 27th, when there was seven feet of water in the waiting rooms. er floor of the station had to be abandoned at 5:00 A. M. on the 25th, the freight t 8:00 A. M. and the entire shop plant by 1:00 P. M. The Division offices are in the second floor of the passenger station, and the Division officers, dispatchers, ers who were able to get into the building in the morning, were marooned there ›out noon on the 26th, when boats had been secured from Chicago and brought vest end of the city for rescue purposes. Division headquarters were then estab- n the Vandalia station and office building on the northwest side, which was 'ater.

› passenger train—Louisville-Chicago No. 9—was marooned at Logansport. ers were cared for in the train and fed at restaurants until the water compelled seek higher ground. Most of them left on the afternoon of the 26th for Chicago, .ken in busses to the west end of town, trains from Chicago being able to get : town on the old line as far as Bates Street.

ity bridge and a trolley bridge over the Wabash River, one block west of the ›r station, went out on the 26th, about 2:00 A. M., breaking down all wires. :er flooded the Western Union Offices, and cut off the battery supply for such ward the east as were not broken, so that they were useless, and communication irely shut off. Rumors went broadcast of great loss of life, but they were later › be without foundation. (See account of provision of rescue boats under on Vandalia Railroad.)

: water reached its highest about noon on the 27th, and shortly after began e rapidly, so that by 9:00 A. M. of the 28th the railway property in Logans- l vicinity was practically free of water. The main damage was found to have :he machinery and tools in the shops, which were covered with mud; to the ice ıd its contents, which were washed away; and to freight in the house and cars, which was washed away or ruined.

the 29th, the tracks had been put in shape for use and passenger service through ort was resumed.

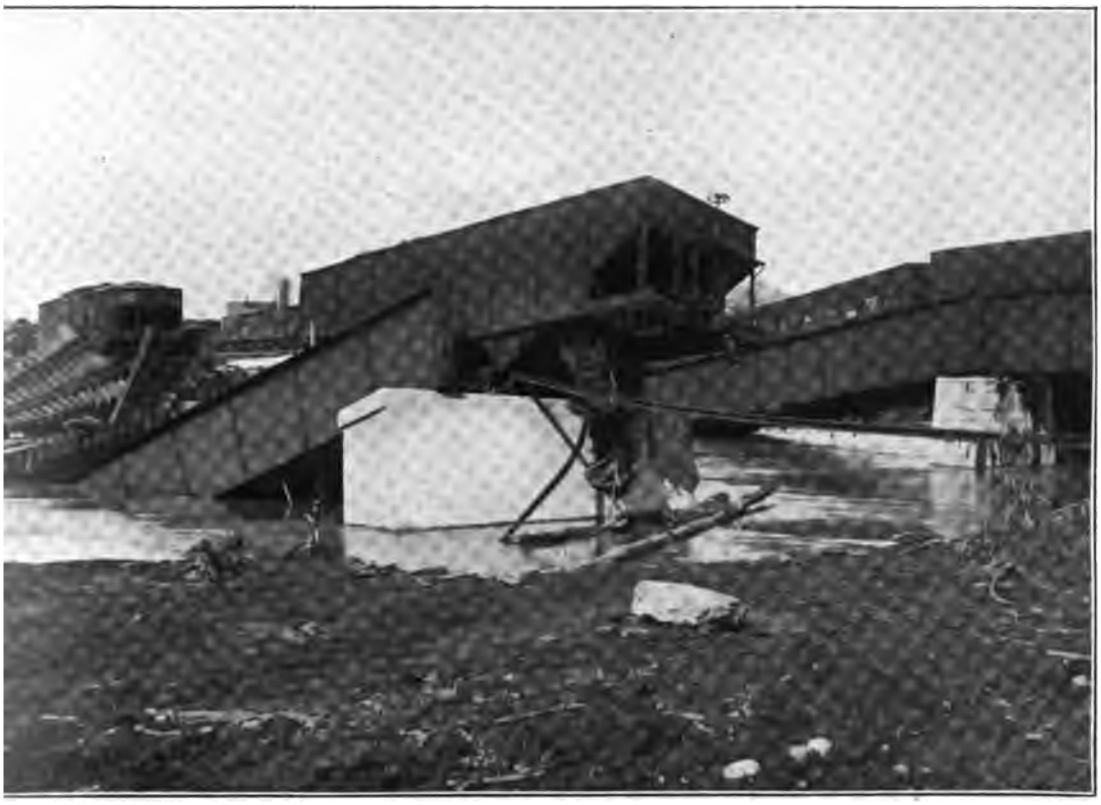
Muncie, one pier and one abutment of the bridge over the White River were ned, and two of the three spans, and the loaded cars which had been placed , went into the river. Passengers were taken to and from the station in car- nd passenger service was not stopped by the loss of the bridge. A frame trestle it, completed on April 10th.

Muncie, Ind.

Penr

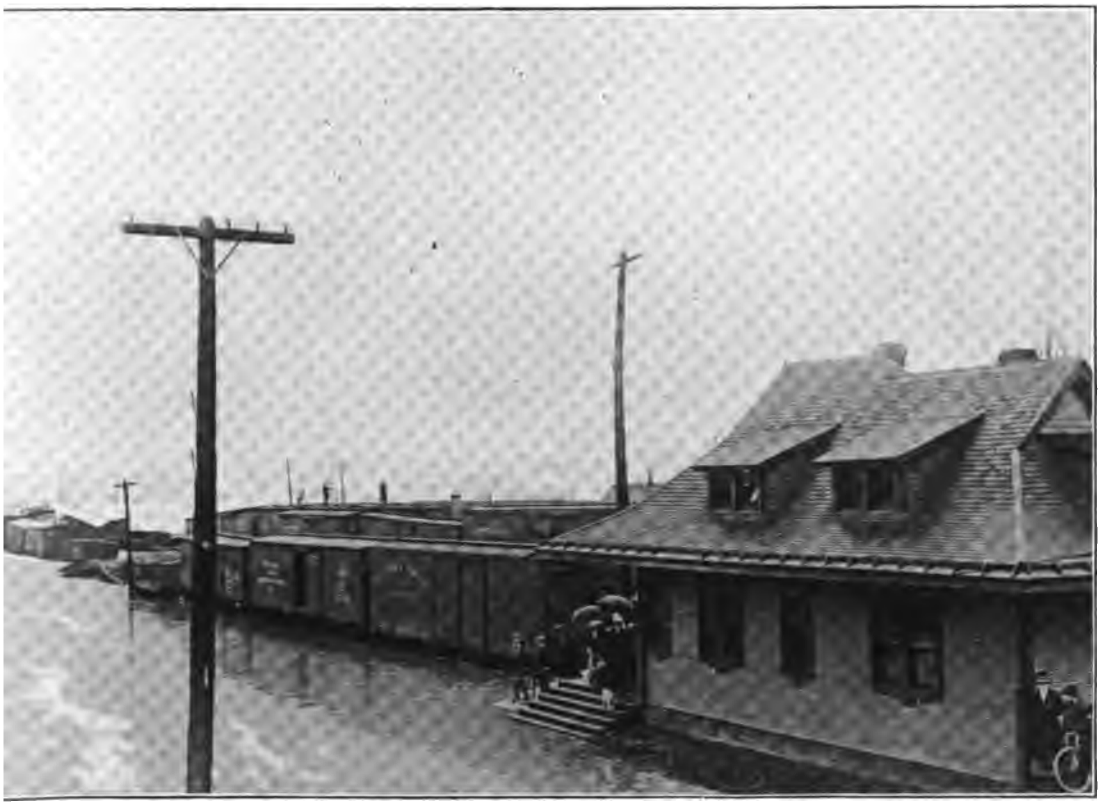
Muncie, Ind.

Penn



March 27, 1913.

ennsylvania Lines Bridge over White River, in foreground. Chesapeake & Ohio Bridge to the right.



March 27, 1913.

ennsylvania Lines Station, and view of tracks to north toward bridge over White River, which was washed away.

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CHAPTER 24.

LOUISVILLE DIVISION.

ıin line of the Louisville Division parallels the East Fork of the White River ıtary Driftwood River (or Sugar Creek) from Edinburg south to Rockford, miles. Into this river flow numerous creeks, several of which are crossed sville Division or its branches.

ıight of March 24th, heavy wind took down the telegraph wires at a number the Division, and the heavy rains of that night and the following day ıght these streams to an unprecedented flood stage. Water was over ıring the day (25th), so as to stop traffic at nine places on the main ːes on the Cambridge City Branch, and three places on the Madison Branch. attempted to make repairs at such points as they could reach, but on .e rising water were unable to make much headway.

possible to perform any sort of through passenger service. No. 37 of the 25th Columbus (Ind.) and was held there. No. 19 got as far as Seymour and ɔ Louisville as No. 36. No. 6 got no farther than Belt Crossing, Indianapolis, ned to the Union Station. Nos. 24 and 36 were held at Indianapolis, n the Madison Branch were run between Madison and North Vernon. s were annulled, and on the following day, the water being still higher, rains were annulled.

:h, the work trains did what they could, and during that day and night ɜtting through minor breaks to the portion of the main line which was damaged, the twenty-eight miles between Edinburg and Seymour. ɜrefore, it was possible to run local trains between Indianapolis and Amity, ɔuisville and Seymour, on the main line; and between Madison and ınd Richmond and Shelbyville on the branches.

!9th a washout at Edinburg was repaired sufficiently to permit trains he line was opened to Columbus (Ind). The Madison Branch ıired save for a washout at Clifty Creek, just north of Columbus, sible to get passengers through between Louisville and Indianapolis t the Clifty Creek gap. This was done by using the B. & O. S. W. North Vernon, and the Madison Branch to Columbus. This gap 30th and service between Indianapolis and Louisville was continued il April 11th.

.he Ohio River came up so high as to endanger a new fill on the New ıich acts as a levee protecting almost the whole town of Jeffersonville, ı line passenger station, freight station and yard tracks. A leak ι flood gate in this fill, and all day and night and for several succeed-s, the Company's forces, augmented by a detail of convicts from ear by, which was also threatened, worked with bags of sand and

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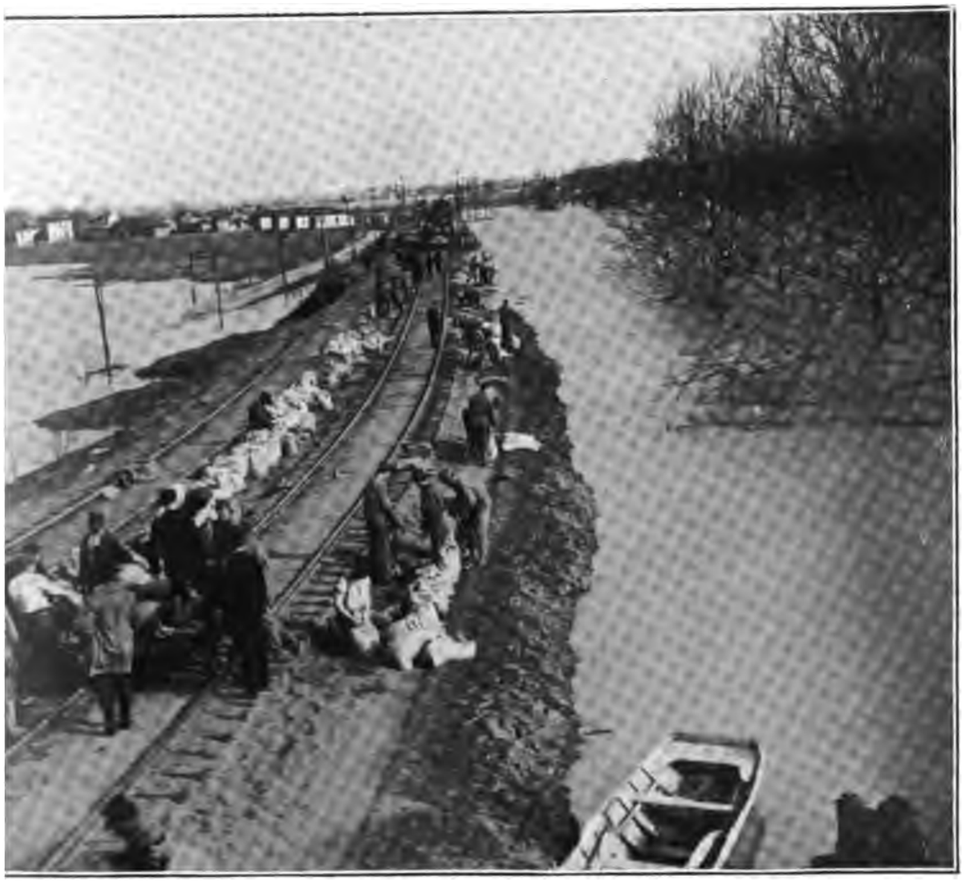
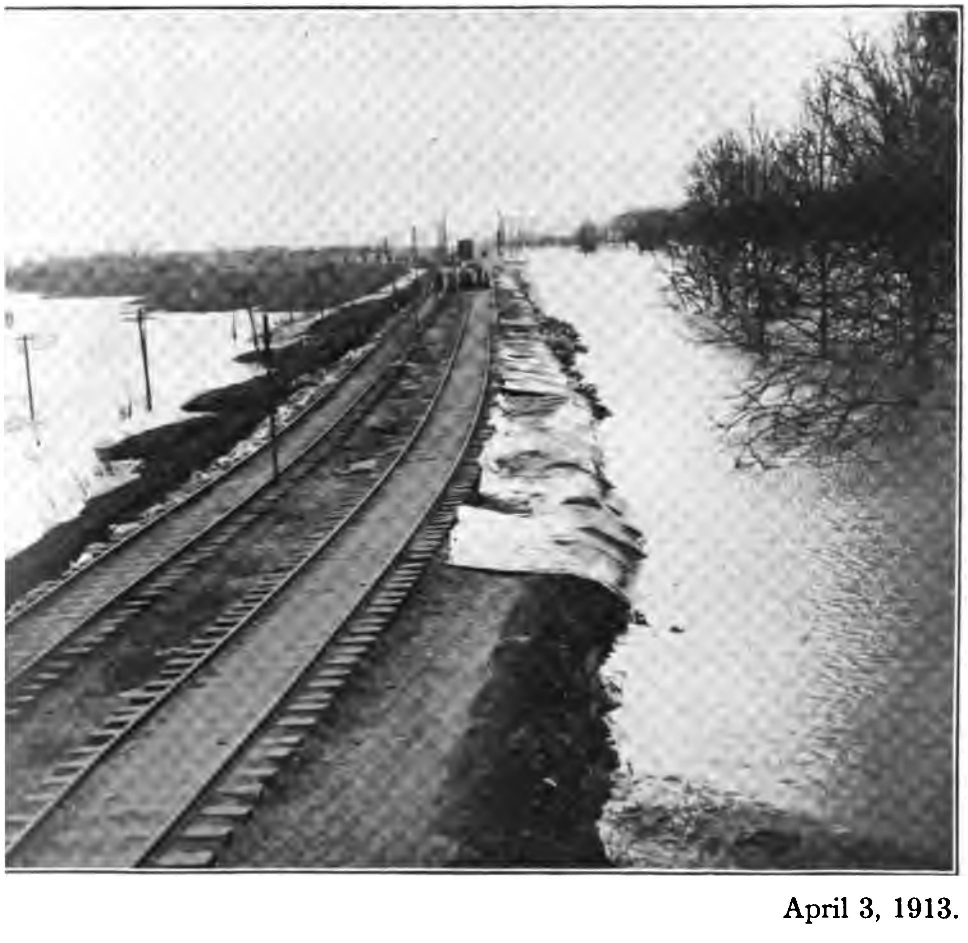
Jeffersonville, In

Sand bag fill, p
protecting



April 3, 1913.

fill with sand bags, to act as levee protecting portion of town.
ater 20 feet higher on one side of track than other.



April 3, 1913.

ected by tarpaulins to prevent washing of embankment, acting as levee
rtion of town. Water 20 feet higher on one side of bank than other.

Flat Rock,

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Columbus, Ind.,

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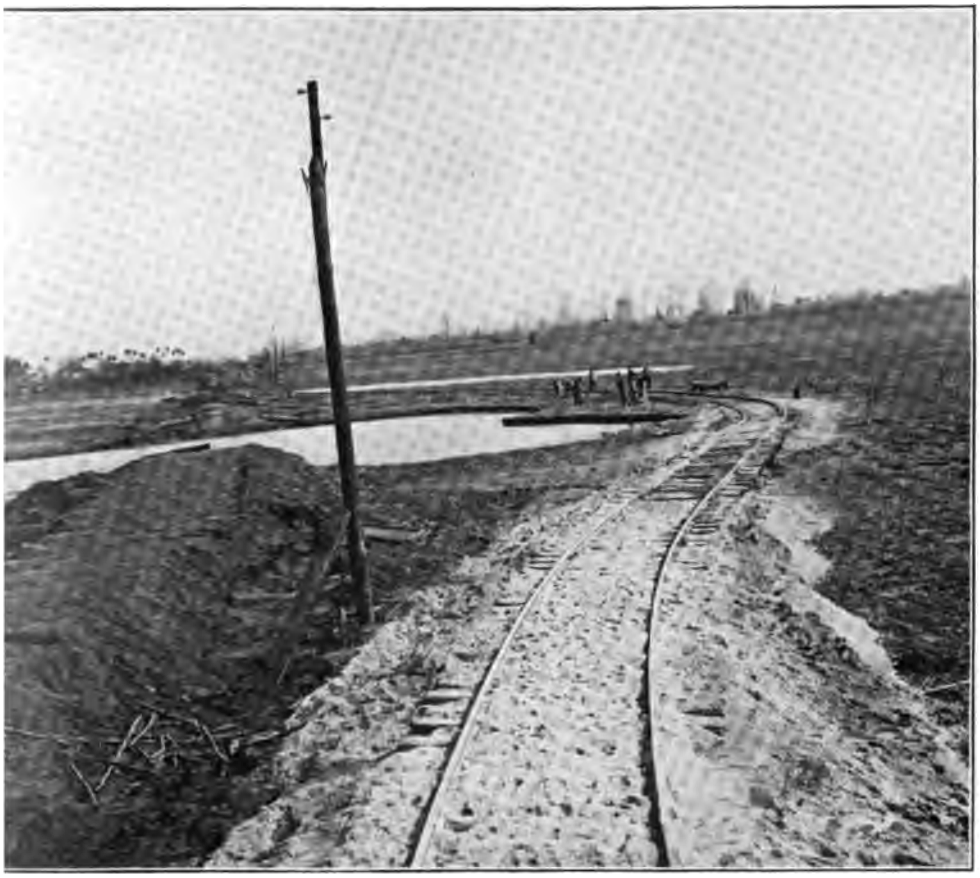
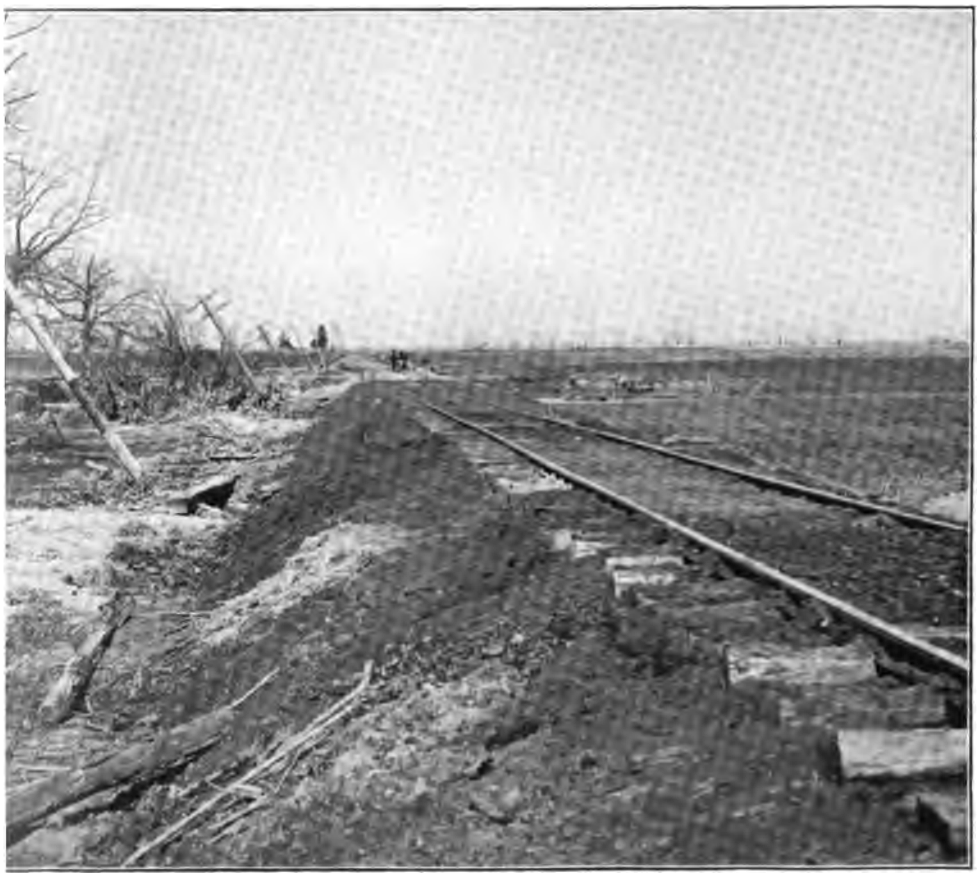


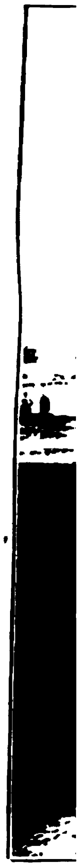
of. April 5, 1913.

.” track in field for temporary service. Cambridge City Branch.



.th of. April 5, 1913.

›n Branch track replaced, and about ready for regular service, after having been washed out a second time.



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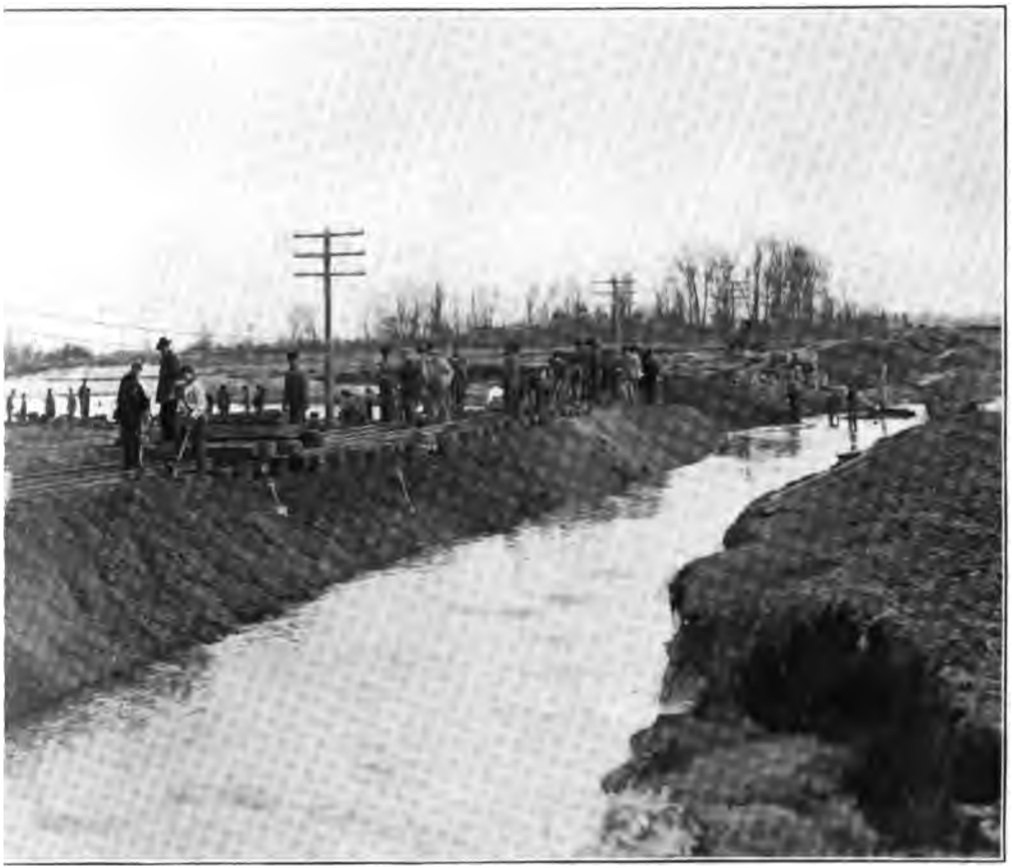
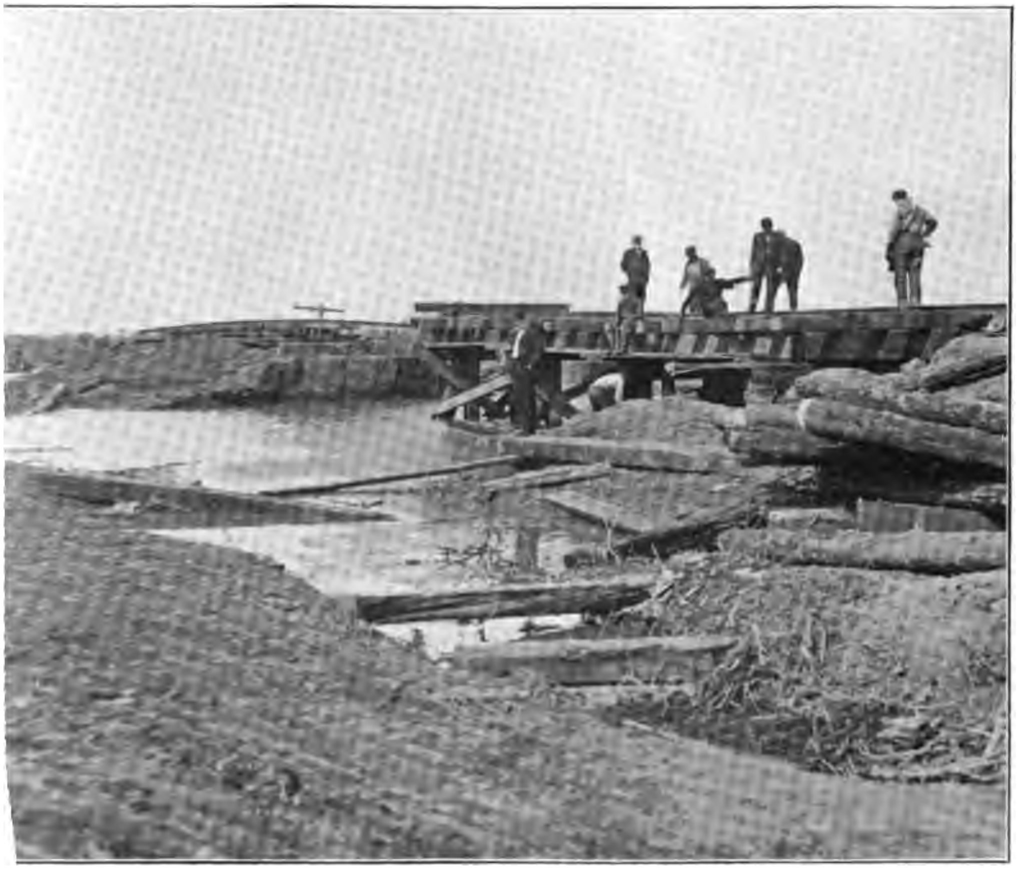


outh of. April 5, 1913.

Main line, looking south across Bridge No. 24.



f. April 5, 1913.

trestle built south of Bridge No. 37, over Boardley's Hole.

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CHAPTER 25.

TOLEDO DIVISION.

nly place at which the Toledo Division sustained damage worth recording are, where the Sandusky Branch crosses the Olentangy River, and follows the stream through the town, just above usual high water level.

he valley is not wide above the town, nor is the drainage area extensive, ow the town the valley is effectually dammed by a fill carrying the Big Four oss the flood plain, a steel girder deck bridge spanning the Sandusky Branch r. This fill is from twenty to twenty-five feet in height, and the opening was ample for all ordinary floods. But the extraordinary rush of water on and 25th could not pass through the bridge opening and accumulated ill until it stood fifteen feet higher than ever before, and just about that he part of town lying next the river. All the city bridges were swept pier of the Big Four Bridge went out, and the girders fell into the stream. the water through the bridge opening was so great that these girders were l hundred yards down stream, and landed not in the channel of the river the east bank.

was stretched between the portions of the bridge remaining in place, and s of getting from one side of the river to the other for several days was ulled across suspended from this cableway. The Sandusky Division he river remained in place, but as it is about a mile south of town and ly be reached, it could not be used for this purpose.

nger and freight stations were inundated. Cars on sidings were washed ot trestle was destroyed and the tracks pretty generally torn up through the right of way covered with debris, but on Saturday the 29th the road ough Delaware again, providing an outlet for the passengers who had Columbus for a chance to proceed on their journey since the 25th.

s done to the tracks by slight washouts at several points on the Division n repaired and resulted in no particular delay to traffic.

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CHAPTER 26.

MARIETTA DIVISION.

r convenience, the Marietta Division may be considered in two separate sections main line, from Canal Dover to Marietta, and the Walhonding Branch, from Lou- e to Coshocton. The former was damaged severely at two or three places, while alhonding Branch was all but destroyed.

MAIN LINE.

e main line is in the valley of the Tuscarawas River at Canal Dover, for several nd crosses it again at New Comerstown. From Guernsey south to Pleasant City, ws the Wills Creek valley, and from Ava south to Marietta the valley of Duck Most of the Division, therefore follows the courses of streams, and suffered ngly.

Tuesday, March 25th, the water rose so high that the work trains sent out could o headway in making repairs, and washouts and land slides occurred over the line. During the night a train of slag ran into an unreported washout near Run, and the engine was overturned. The wreck train sent out to pick it up ot get to it, nor could it return to Cambridge and was used as a work train until t.

the 26th, the Tuscarawas River cut out the embankment approaching Bridge , over that stream south of New Comerstown. In the Cambridge district, Wills covered the tracks about six feet, and considerably damaged the roadbed. were very few trackmen available in the Cambridge district, and the repairs ade mainly by shopmen and trainmen who volunteered assistance.

the evening of the 27th, the water had gone down enough in the Tuscarawas al Dover to permit starting repair work at that end, and the line was opened anal Dover to New Comerstown on Saturday evening the 29th.

uth of Cambridge there had been comparatively little damage, and in the valley k Creek practically none at all.

the Tuscarawas River receded at New Comerstown, it was found that the rth) approach to the bridge had been washed out for 150 feet, thirty feet deep, longer hole but only half as deep had been made through the embankment west (south) end of New Comerstown yard under main and ladder tracks. day, March 30th, work was begun on blocking up these tracks and making new o permit transfer of passengers over Bridge 27, two wire cables were strung under of one of the swinging tracks, and a third cable strung for a hand rail. Planks id between the rails, and a foot-bridge had been improvised over which passengers, e, mail and repair material were transferred until the afternoon of April 3d, he approach to Bridge 27 had been replaced with a pile and frame trestle.

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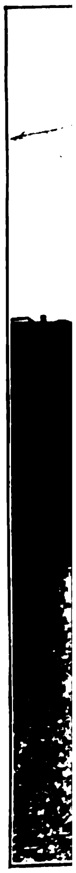

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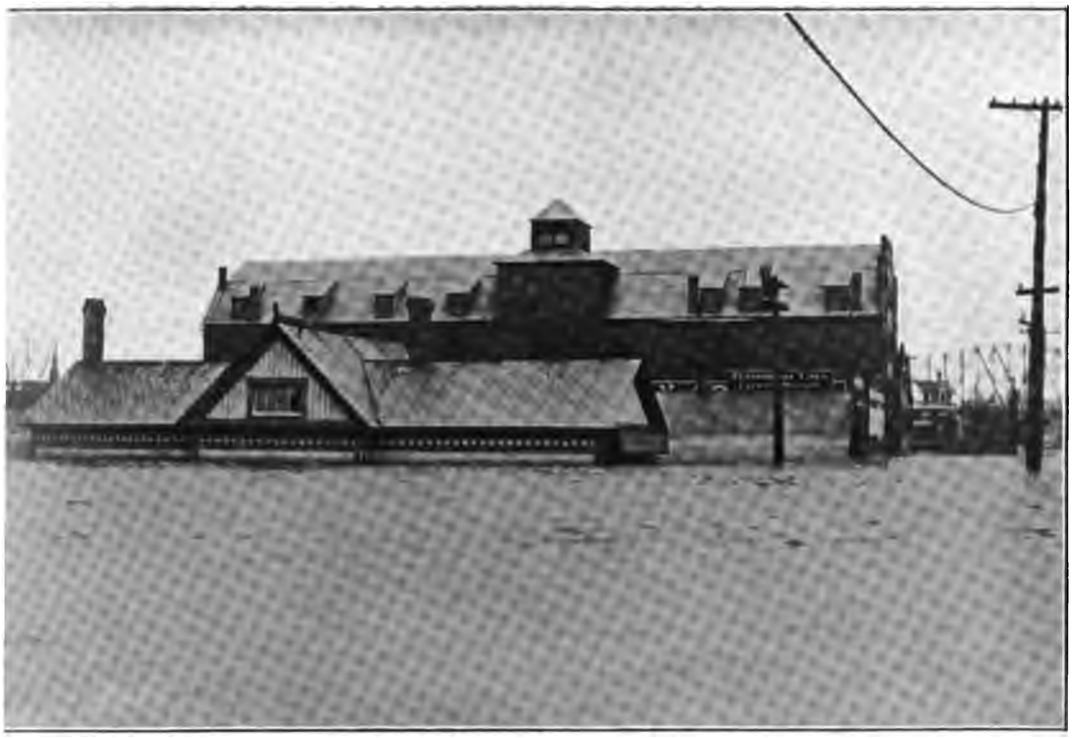
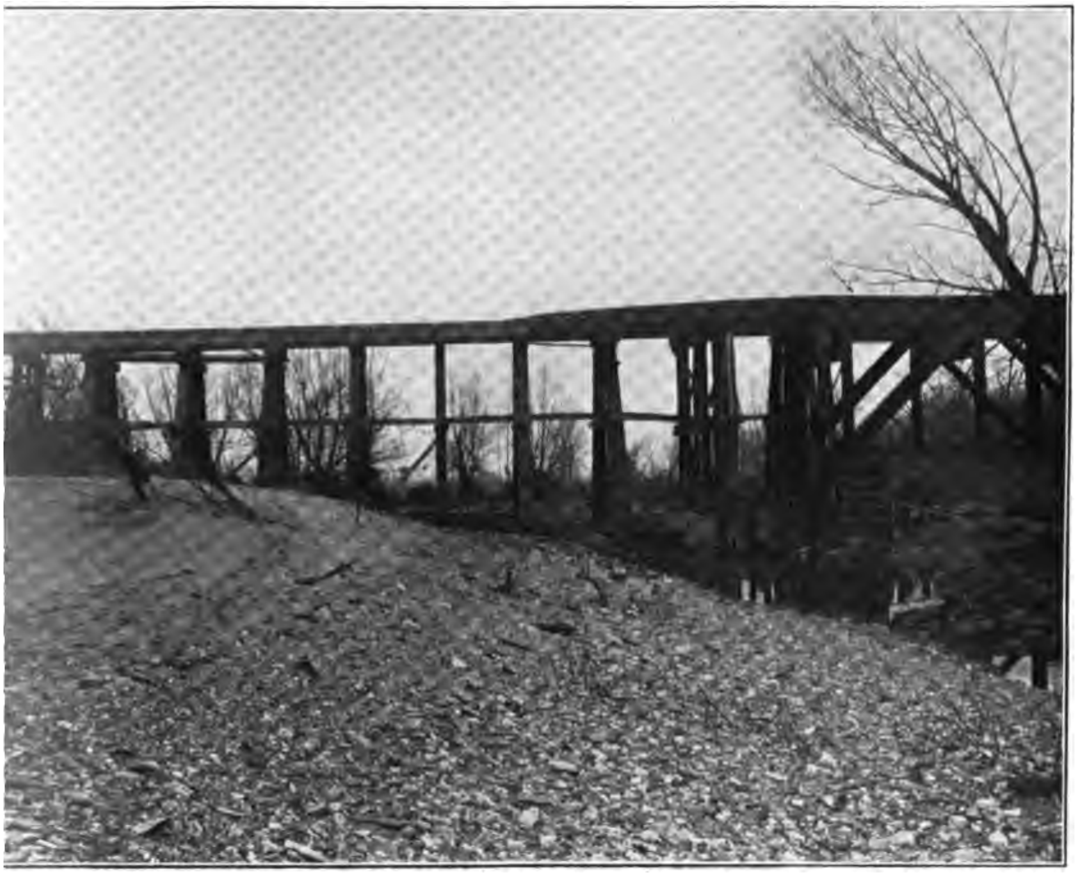


io. March 30, 1913.

vania Lines Passenger Station in foreground, and Freight Station just back of to the right. Water receding. High water line may be seen on roofs.



ı, **Ohio,** east of. April 7, 1913.

y **trestle** replacing approach to Bridge No. 27, over Tuscarawas River.

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WALHONDING BRANCH.

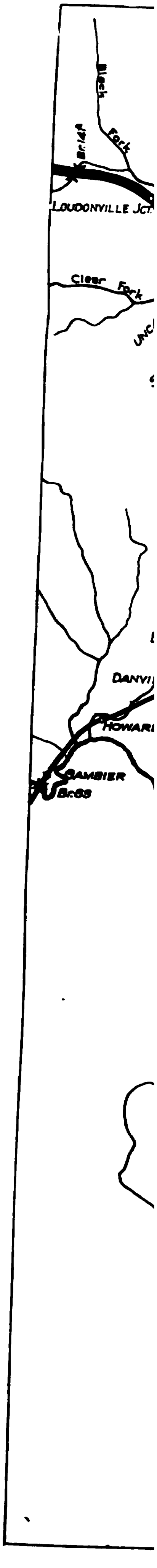
ng Branch, from Coshocton, Ohio, north to Loudonville, follows
lhonding River from Coshocton to Walhonding, where the Mohican
rs unite to form the Walhonding. It then follows the valley of the
to Spellacy; and from there to Loudonville, the valleys of the Little
lack Fork of the Mohican River. It is first on one side, then the other
ossing them thirteen times. These rivers all rise in the belt of greatest
45 miles of line, there were only about 17 miles where the track was not
t of the Branch was under from six to thirteen feet of water, with an
current, so that the destruction was almost complete. At every one
ges crossing the Walhonding and its tributaries, the bridge was destroyed
approaches badly washed away, and long stretches of roadbed between
In all 12.11 miles of main track needed rebuilding or repairs, including
le of trestling.

rains had been sent to Warsaw Junction when trouble first started,
ned forces and were able to block up the track between Roscoe
But the conditions on all Divisions connecting with the Walhonding
ch that no adequate repair force could reach the points of damage
Divisions were sufficiently repaired. When this had been done, the
nch work was attacked at five separate places at about the same time.
, April 6th, the Pittsburgh Division having been sufficiently repaired
rietta Division work train to run from New Comerstown to Coshocton,
d in replacing the fill east (south) of Bridge No. 1, and by the evening of
as finished so that the gap between Bridges 1 and 2 could be reached,
t of trestle had been washed away. A track on the low level was con-
rd rails of Bridge No. 1 and old ties, for use in distributing material
y the pile drivers.

me Sunday, the 6th, a Toledo Division force, which had been engaged
e Dresden Branch of the Akron Division, arrived at Warsaw Junction,
work north from there toward Brink Haven. On the same day, also, a
ailroad force, which had been working on the main line of the Akron
ed at Brink Haven, and began to work south toward Warsaw Junction.
9th a pile driver and crew arrived at Warsaw Junction, via Trinway,
he north end of the trestle gap between Bridges 1 and 2, so that trestling
ds might cut in half the time necessary for getting through there. On
a force started at Loudonville to work south toward Brink Haven, and
force which had been putting the Akron Division main line in shape for
d arrived at Brink Haven, to work north toward Loudonville.

er, therefore, there were on April 10th six distinct forces engaged in the
on this Branch. As there was about 3,500 lineal feet of trestle to build,
hree miles of main track washed clear off the right of way, with something
more to be cribbed and blocked up, the six gangs were none too many.

stling between Bridges 1 and 2 was completed on April 18th. The Toledo
ce completed Bridge 14 on the 19th, the Long Island force completed the
en Bridge 14 and Brink Haven on the 21st. On the 21st, the two forces
ard each other on the north end of the Branch met at a point east of Bridge
Branch was open throughout. On the 23d traffic on the Branch was resumed.


Black Fork
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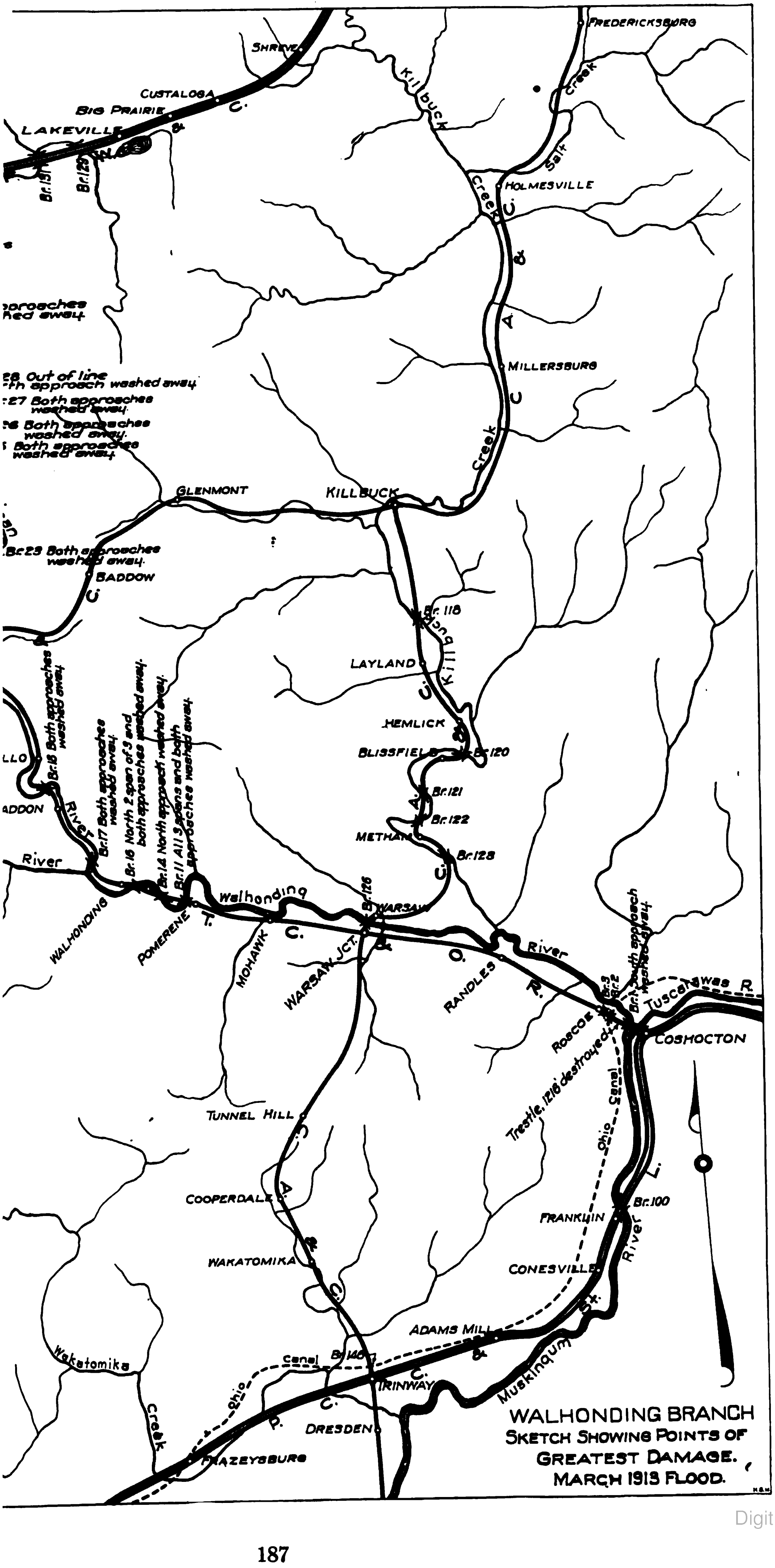
LOUDONVILLE JCT.
Clear Fork
UNC
DANVI
HOWAR
GAMBIER
Br.68



WALHONDING BRANCH
SKETCH SHOWING POINTS OF
GREATEST DAMAGE.
MARCH 1913 FLOOD.

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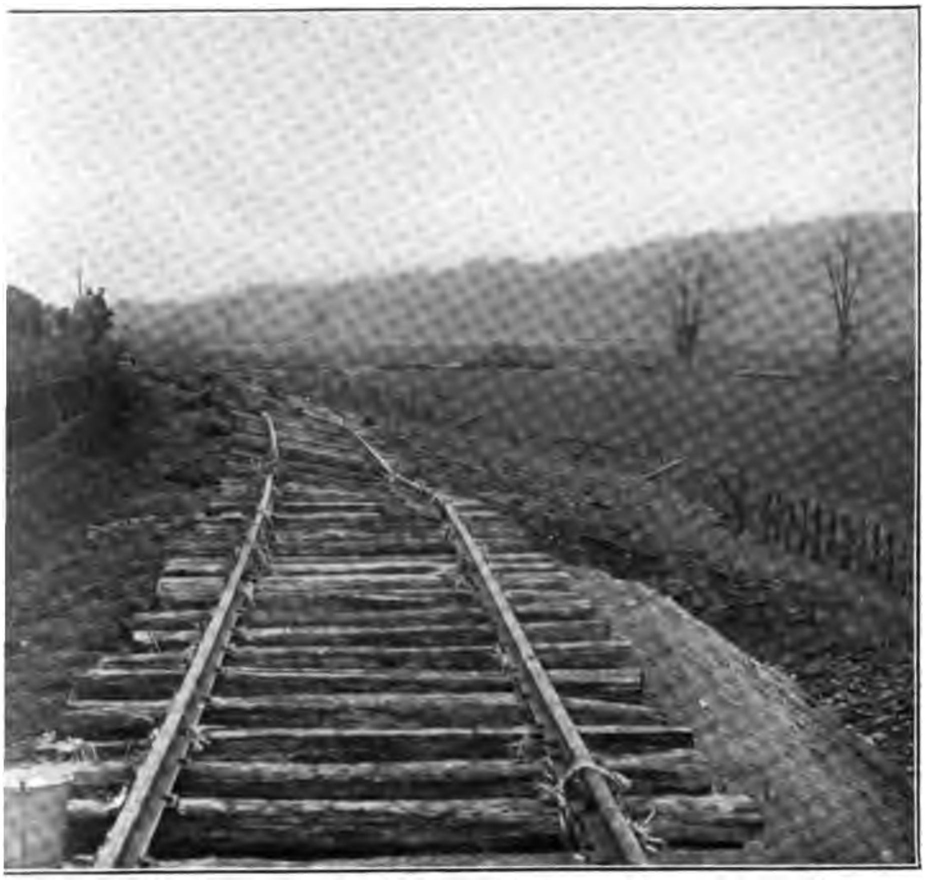
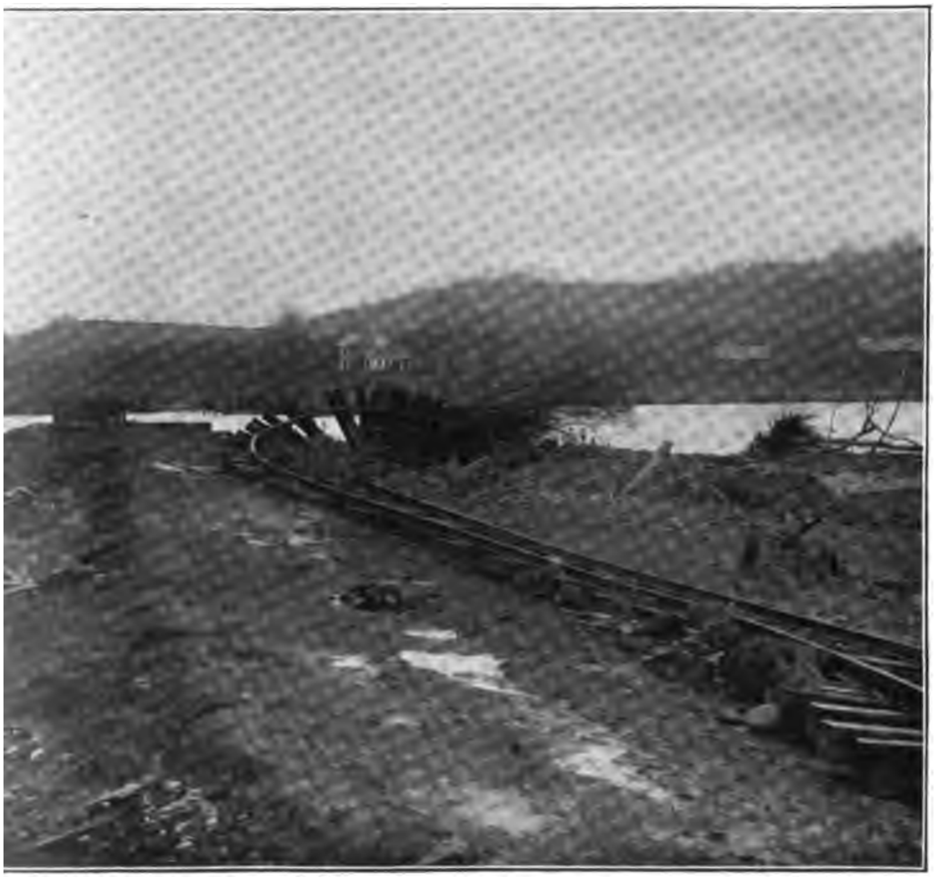


April 4, 1913.

eplacing fill washed out by Walhonding River.

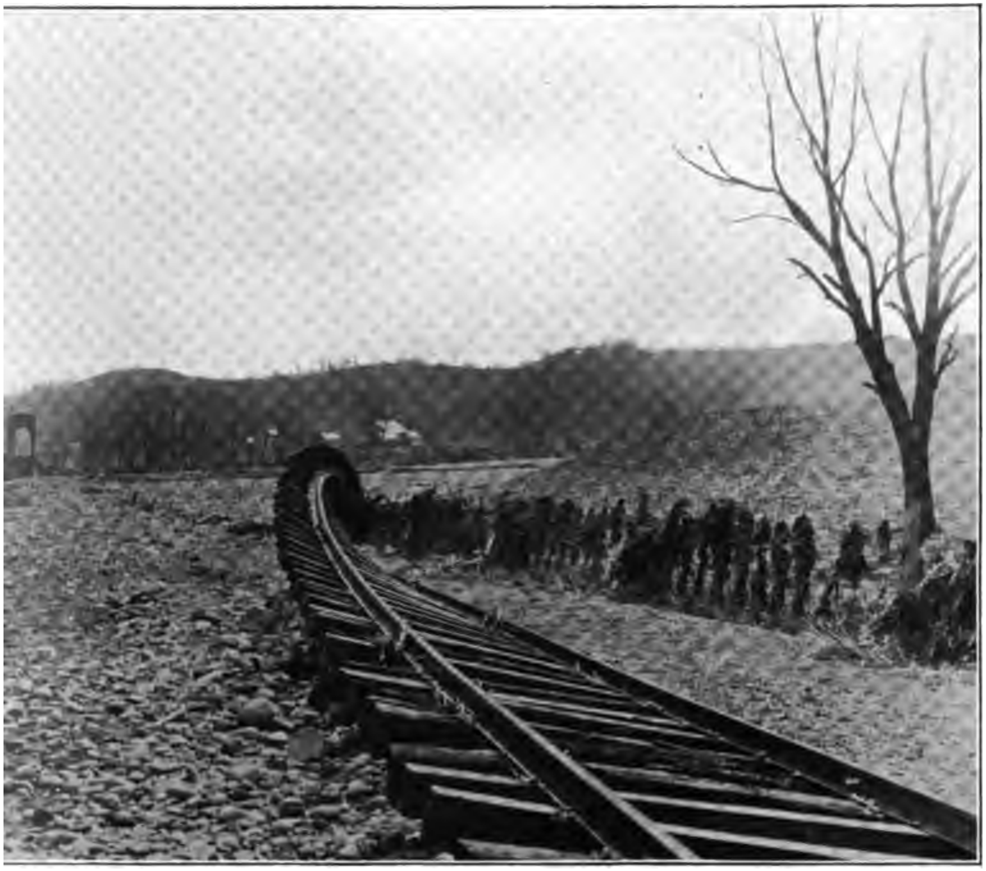


April 4, 1913.

No. 11, over Walhonding River, completely destroyed.

Cavallo,

Cavallo,

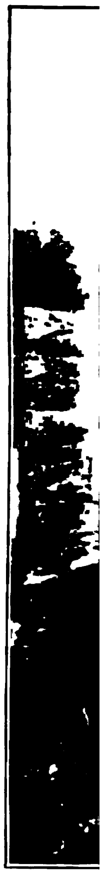


of. April 5, 1913.

Looking west toward Bridge 18, over Mohican River.

April 5, 1913.

est approach to Bridge No. 18, over Mohican River.



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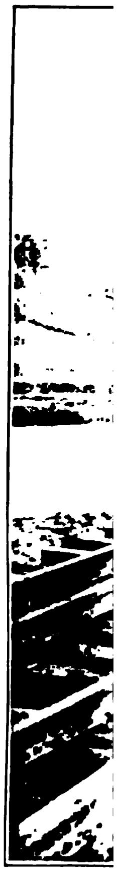

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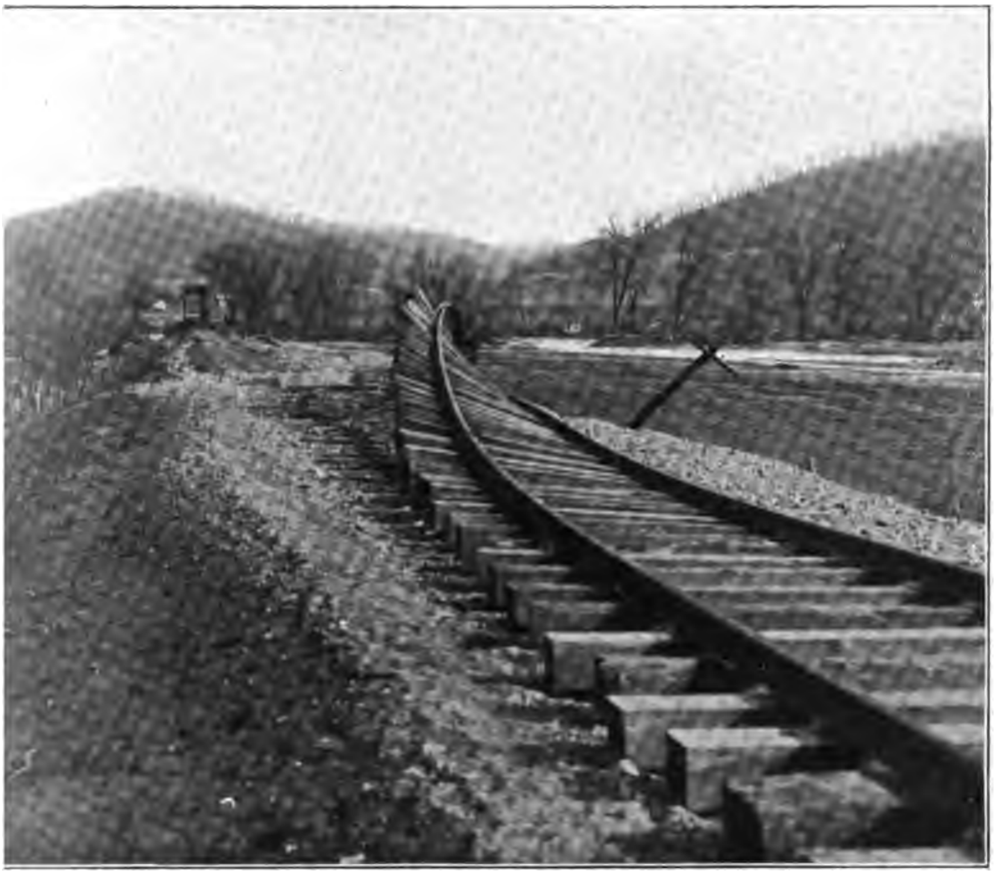
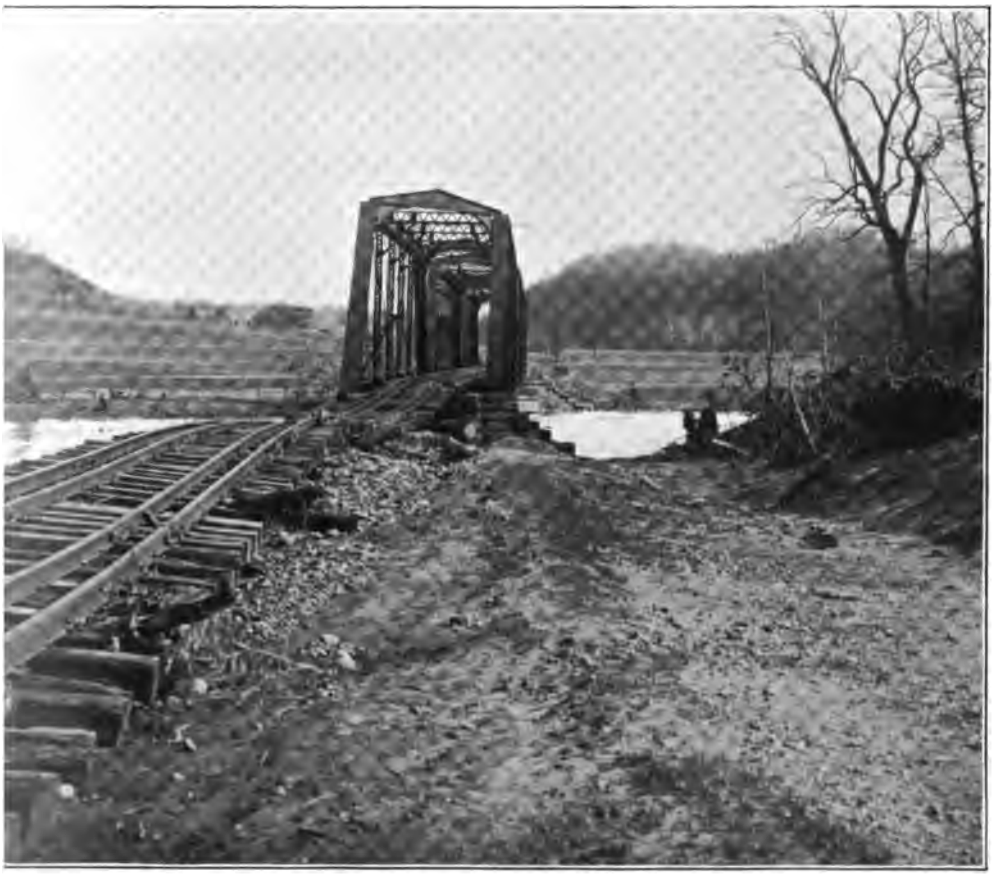


of. April 6, 1913

East approach to Bridge 25, over Mohican River.



April 6, 1913.

ast approach to Bridge No. 26, over Mohican River.

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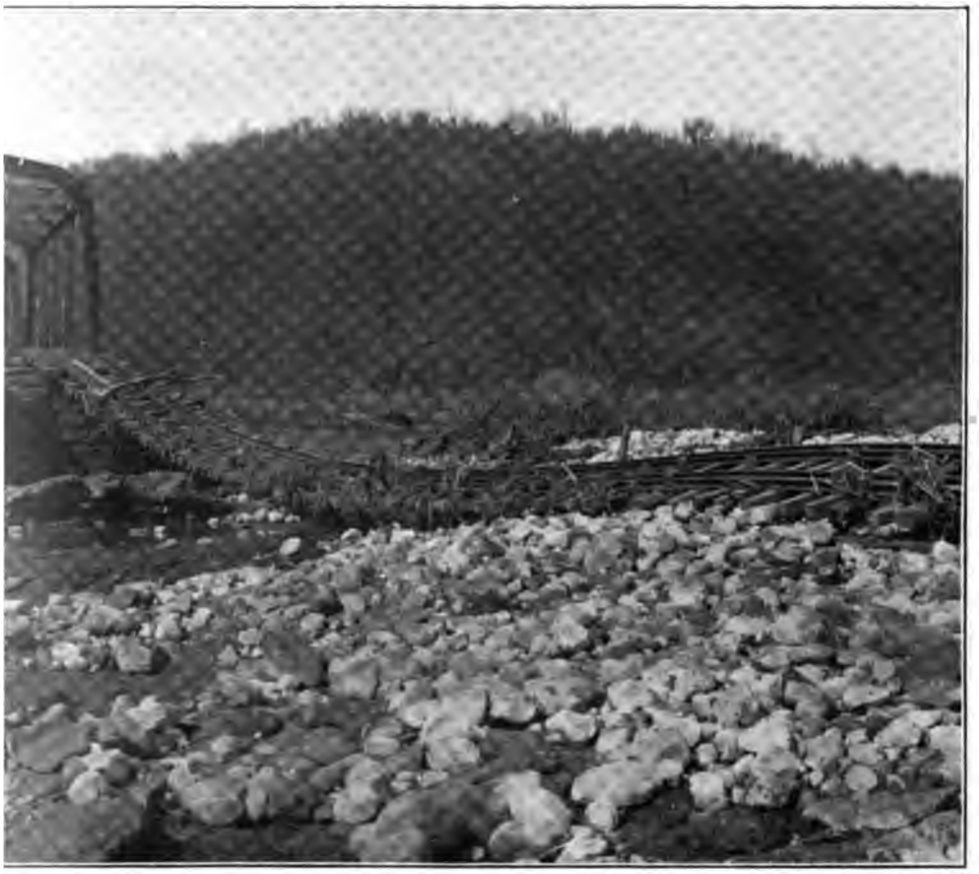
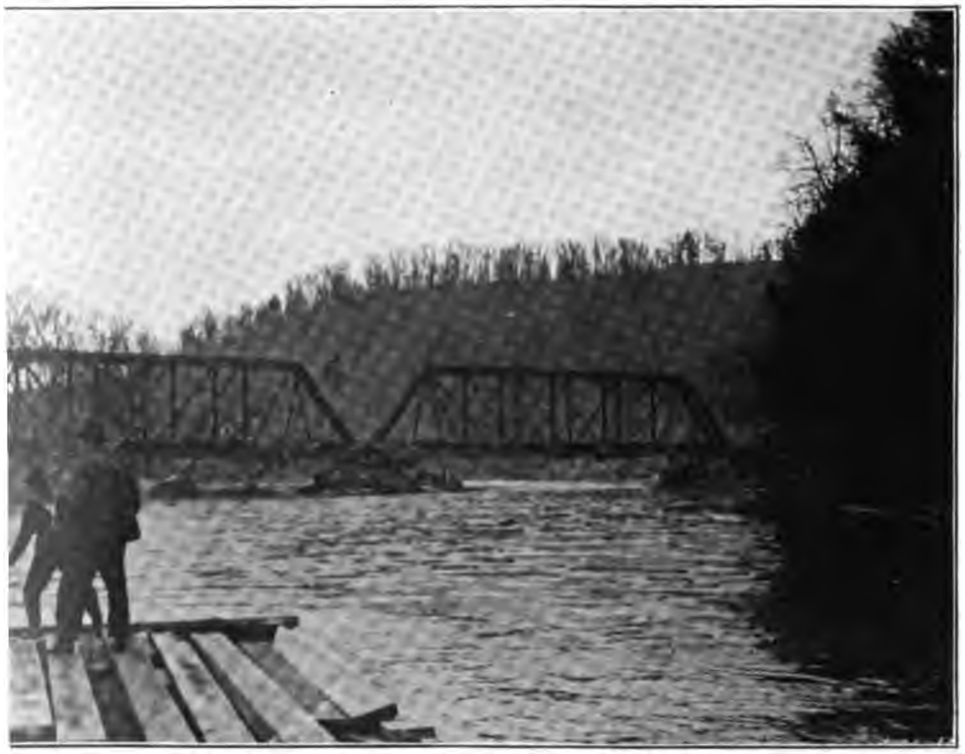


April 6, 1913.

ɔf washout at west end of Bridge No. 28, over Mohican River.



April 12, 1913.

ıaterial for trestle at Bridge 28, being rafted down stream.
Bridge 29 in center of picture.

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CHAPTER 27.

AKRON DIVISION.

line of the Akron Division, from Hudson, Ohio, to Columbus, lies for stance in the belt of greatest rainfall. From Apple Creek to Mount of the line is in the valleys of the tributaries of the Walhonding River sly damaged in a number of places. The Dresden Branch, from Kill- ay, was also seriously damaged, particularly where it follows Killbuck illbuck to Warsaw Junction.

g first the situation on the main line: By six o'clock on the morning of ffic was brought to a standstill by water over the tracks at many points. trains were marooned, one at Brink Haven, one at Orrville, one at Mount e at Apple Creek, neither of them being damaged, however.

18-A, south of Barberton, Wolf Creek washed out both main tracks for osited a track of the Akron & Barberton Belt on the roadbed. At Bridge s south, Pole Cat Run washed out both tracks for about 1,100 feet. At ack at Bridges 19 and 21, over Chippewa Creek, was under water six feet track damaged. From Holmesville to Killbuck, for ten miles, the track ed and 3.87 miles of it washed from one to six feet deep. At Brink ican covered the part of the town in the valley and was eight feet over ng out both approaches to Bridge No. 68. Near Howard, the Kokosing k) washed out about 1,500 lineal feet of roadbed. Bridge No. 83 over iver, south of Gambier, consisting of two through truss spans, was 105 feet of embankment, 20 feet deep. From this bridge to Mount ve miles, nearly all the track was submerged, and over a mile of it alto- shed out. At Mount Vernon, about four hundred feet of roadbed was feet deep.

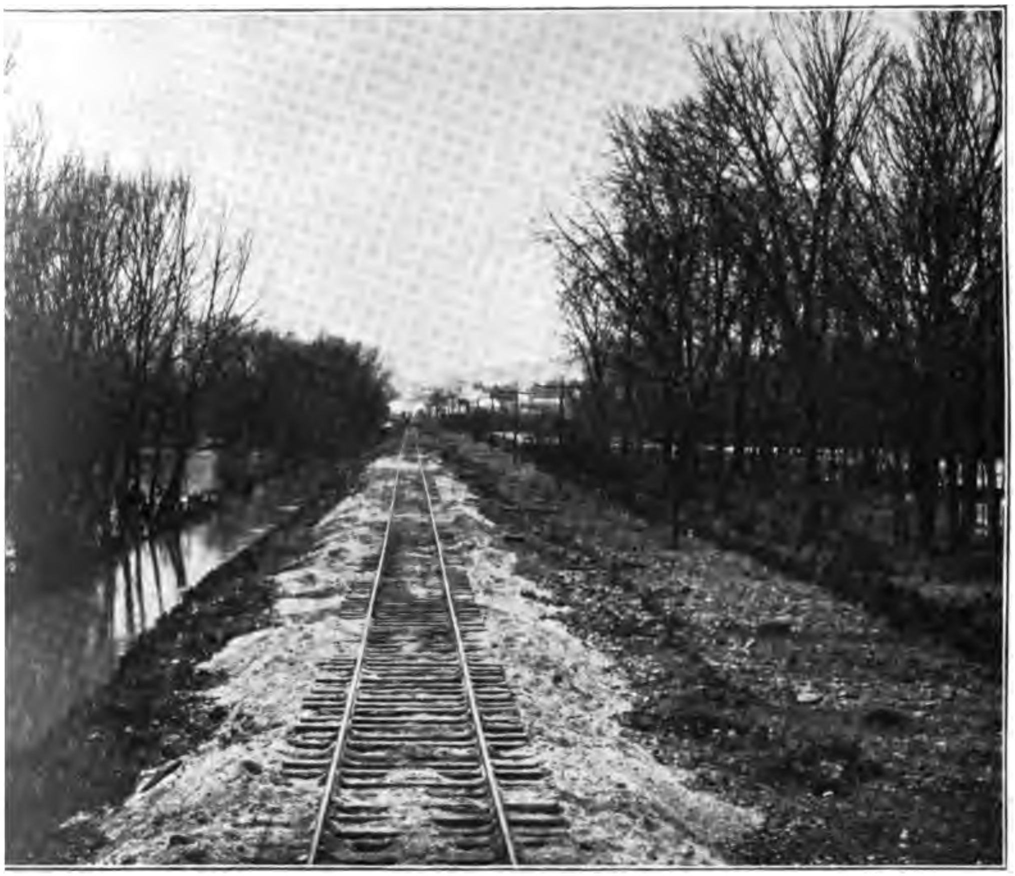
on to Akron the damage had been slight, and train service was resumed n that day the track was repaired to Barberton, and service extended . From Mount Vernon to Columbus, there was practically no damage, lso resumed on the 26th. One track was put in shape from Barberton thence to Orrville the line was repaired by the 29th, and train service nd and Orrville was resumed. By the evening of March 31st, track e and service resumed to Millersburg. As the track from there to s soon made safe for work trains, this permitted starting work on pproaches to Bridge 68, over the Mohican River at that point. This morning of April 1st, by a repair train sent by the Long Island Railroad. red and replaced the old deck of the north approach, and in the even- nstruction of trestle to replace the south approach. Thirty-two frame nts and 250 lineal feet of cribbing were constructed, and at 9:30 A. M. in proceeded to Gambier, where the Kokosing River was to be spanned

Millers

View

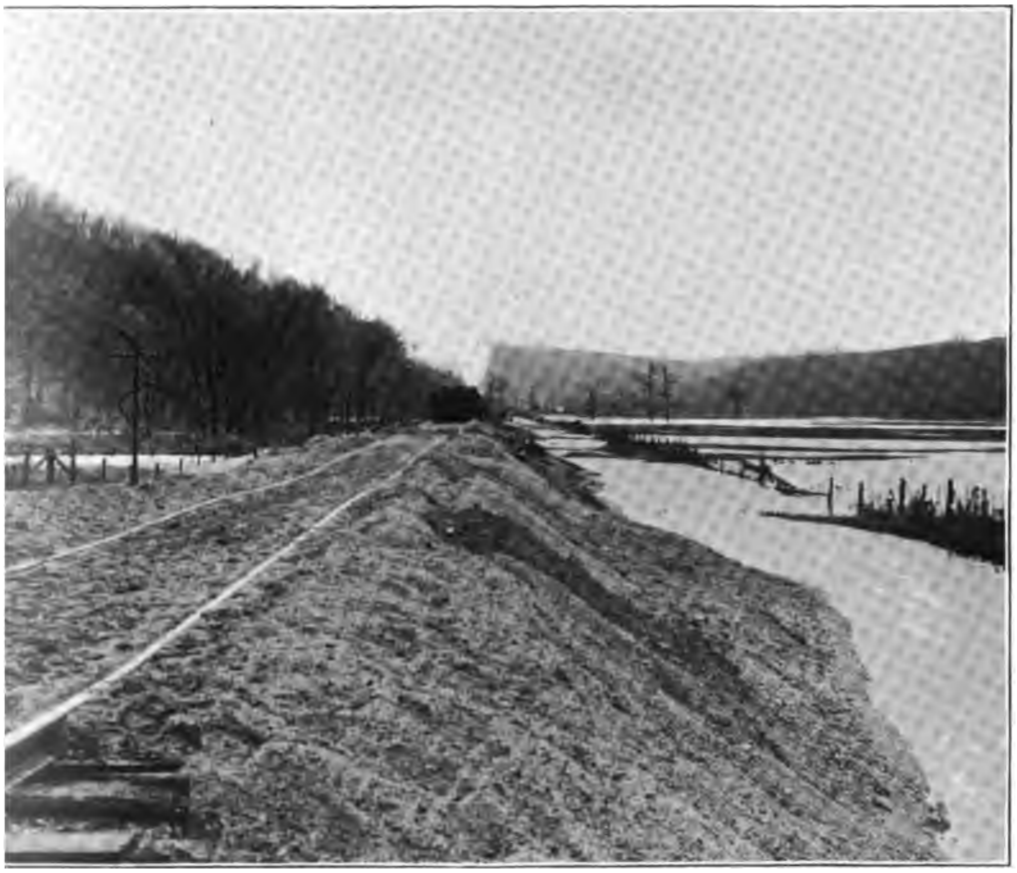
Killbuck

Sho



south of. April 2, 1913.

laced where it had been washed away south of Millersburg, looking north.



1 of. April 2, 1913.

replacing that washed away north of Bridge 49, over Killbuck Creek.

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April 3, 1913.

e 83, over Kokosing River, being replaced with temporary trestle.

ntime, a force from the south end of the Division had repaired the track p to the Kokosing and had almost finished there. On the 4th, about tle was finished, and the Akron Division main line was opened for traffic. a detour route from Columbus, via Orrville to Pittsburgh, and Pan ger service was at once resumed via this route. There were so many nd the traffic was so heavy for the single track line, that commencing ight, April 6th, only the westbound Pan Handle trains were sent this ound traffic being sent north from Columbus over the Sandusky Branch Division to a connection with the Fort Wayne road.

ain repair forces were sent to the Marietta Division, Walhonding Branch, d the balance of the force was kept at work putting the line in shape d until the 12th, when the work of repairing the Dresden Branch was

Helmick

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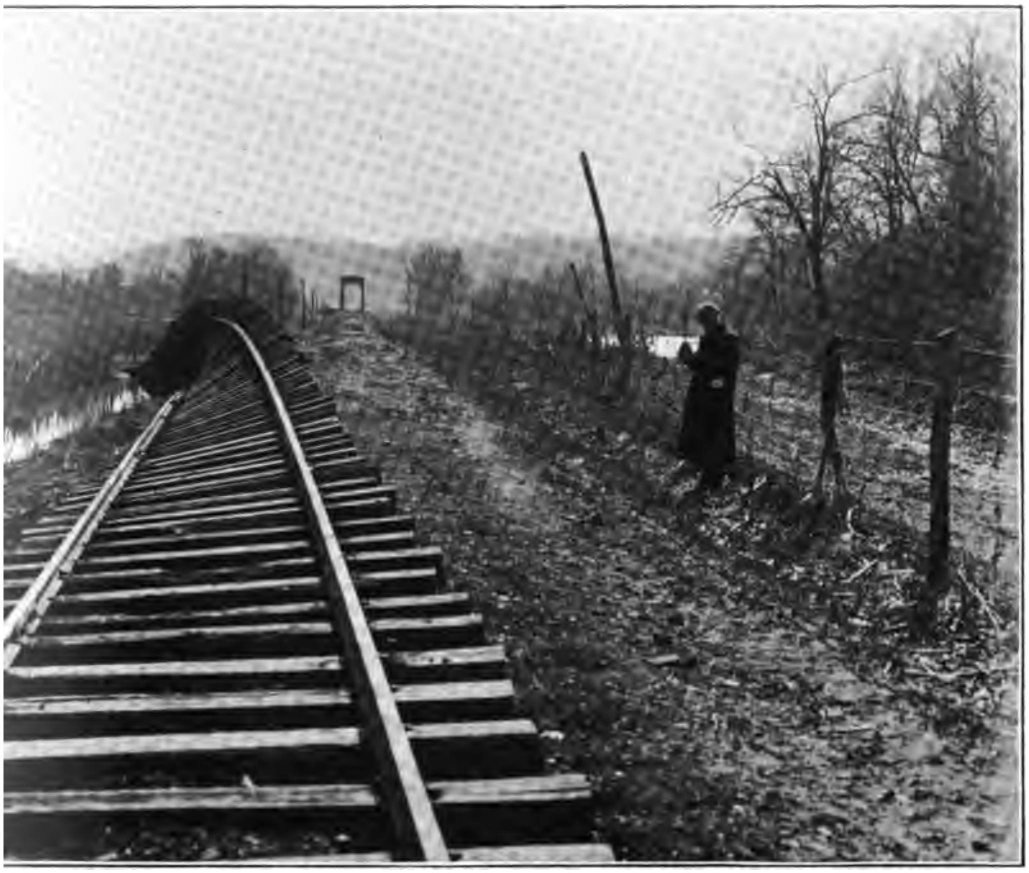
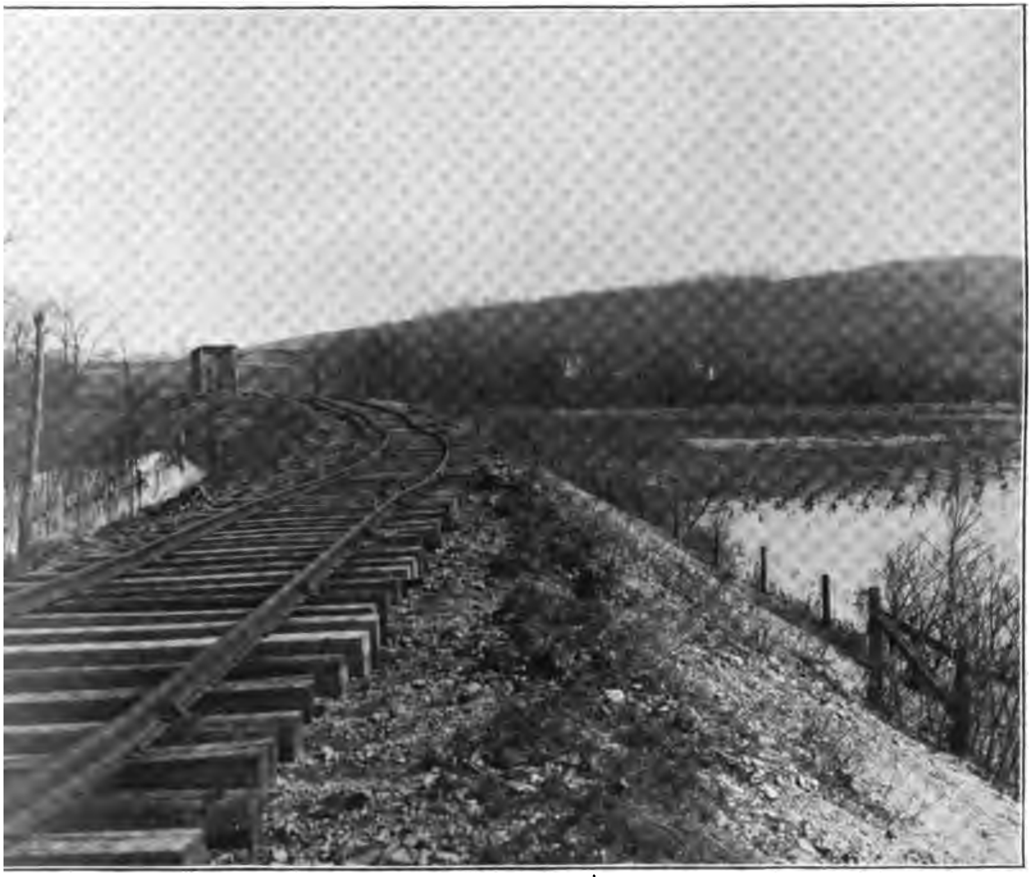


ɔuth of. April 8, 1913.

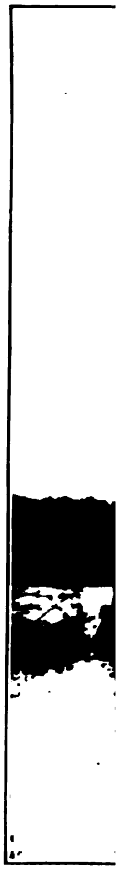
South approach to Bridge 120, over Killbuck Creek.



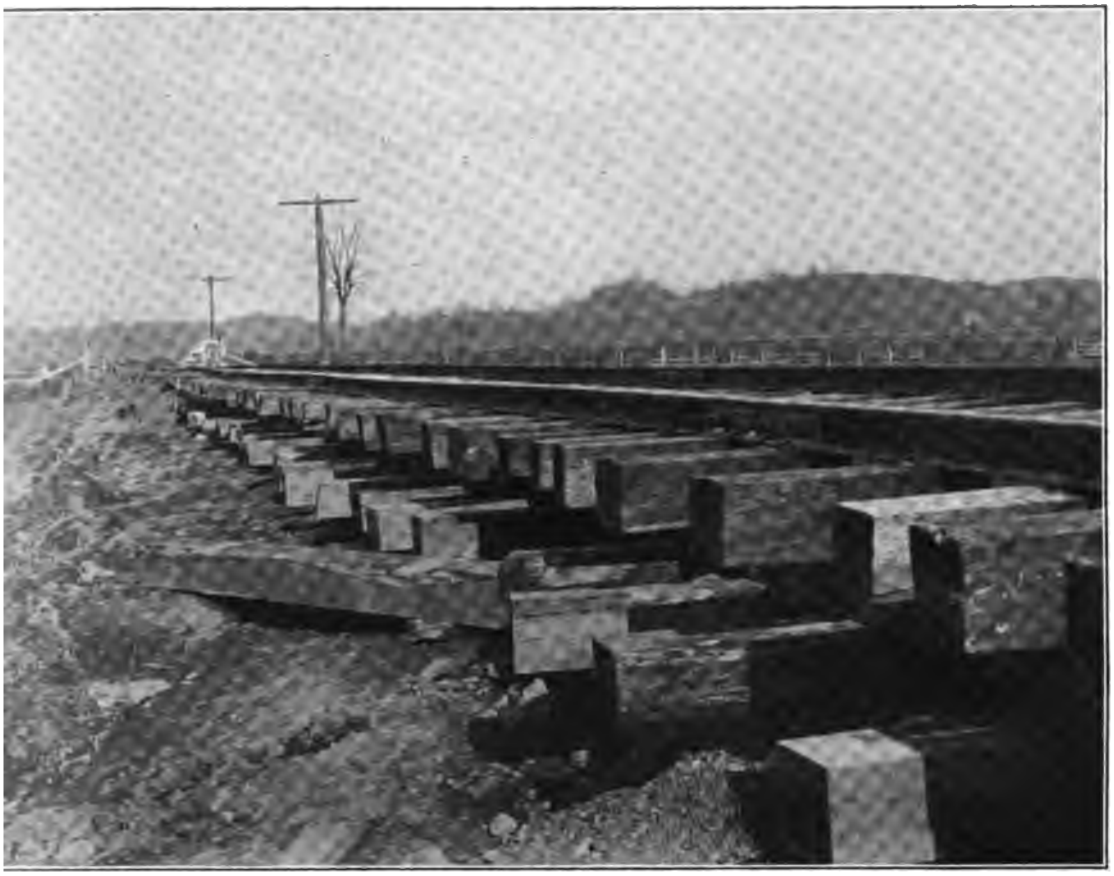
:h of. April 8, 1913.

South approach to Bridge 121, over Killbuck Creek.

Warsaw

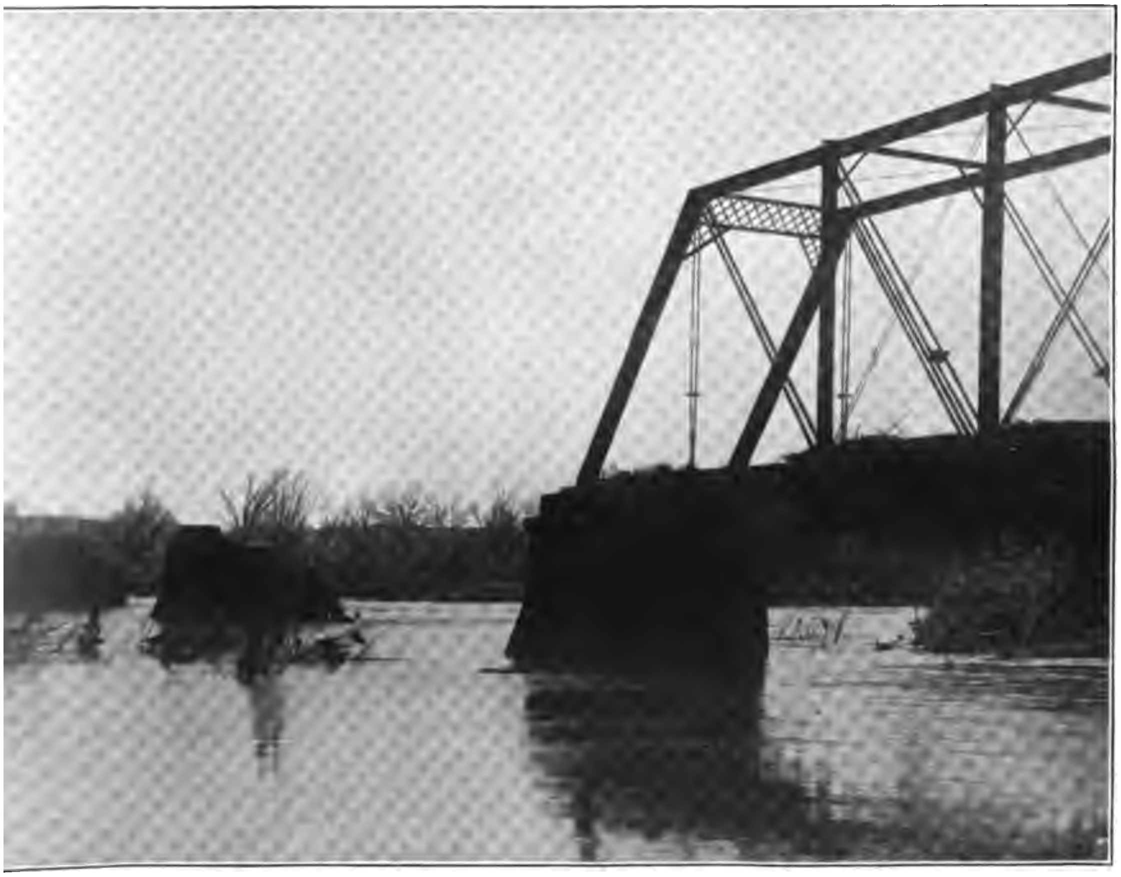


Warsaw



hio, north of. April 8, 1913.

Looking south over washout, showing rails supported on cribbing in preparation for replacing fill.



·tion, Ohio. April 4, 1913.

Dresden Branch Bridge No. 126, over Walhonding River.

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CHAPTER 28.

ZANESVILLE DIVISION.

Trinway and Zanesville, the Muskingum River was from fifteen to seven-
her than it had ever been known to be before. Of the seventeen miles of
n these points, about fifteen were submerged to depths varying up to
and the two bridges over the river were destroyed. The city of Zanesville
d, the water coming into the second floor of the passenger and freight
re the Division offices are located.
litions which brought this unusual height of flood to Zanesville and vicinity
rom those through most of the flooded district. The Muskingum River,
Dresden, occupies a wide valley, or flood plain, usually two miles or more
Dresden it is joined by Wakatomika Creek, from a similarly wide flood plain,
ıtly was, in prehistoric ages, the course taken by what is now the Mus-
wardly from Dresden to the valley of what is now the Scioto River.
ater day, perhaps at a time of some great flood, the Muskingum found
hills forming the southern wall of its valley, and a new course through the
th into the Ohio River. This cleft and the new channel were doubtless,
floods, widened and deepened until they were finally permanently occupied,
annel gradually filled up with the products of erosion.
nt channel of the Muskingum is therefore narrow, and in many places
posed by the stream. This happens at Zanesville, where, on account of
s impossible, in replacing Bridge 20, to resort to the pile trestle, usually
tion of the problem of replacing the bridges destroyed. Instead, frame
onstructed, and steel girders placed on them. At Ellis, however,
of about forty-five feet to the bed rock, and it was therefore possible
ge 12 at that point with a pile trestle.
Zanesville the Divison leaves the valley of the Muskingum, following
Moxahala Creek to McLuney, crosses the summit and into the drainage
ng River, which it crosses at Lancaster. Crossing another summit,
the valley of the Scioto and crosses the river a mile and a half west
Another summit is crossed west of Reeseville, and the track descends
f the Little Miami, along the valleys of Lytles Creek and Todd Fork.
er, where the Hocking River valley is crossed, the yard tracks were washed
r feet deep. West of Circleville the Scioto covered the tracks for a
destroying a ten foot fill for most of that distance, and the track which
nerous minor washouts occurred throughout the Division.
n points of damage were on the Muskingum River, at Ellis and Zanes-
Bridge 12 was completely destroyed, save for one span. This bridge
construction, but a number of years ago, when slack water navigation
a series of dams, a boat channel was dredged, and one of the deck

be
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Ellis, C

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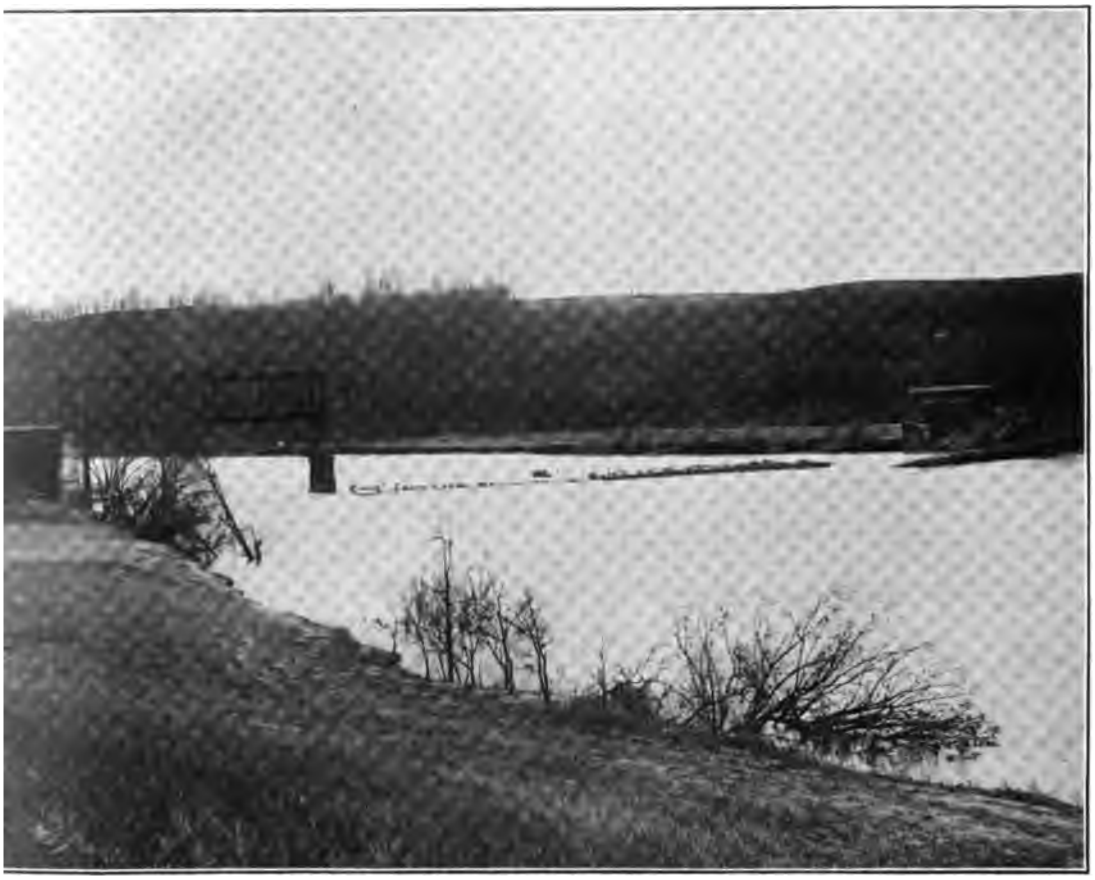
; on account of one of the contractors' pile drivers overturning into the river 1st. On May 13th, regular schedules were again made effective on the Division, ht days after they had to be abandoned.



April 2, 1913.

No. 12, over Muskingum River, showing span which had been raised and made a through span standing, while deck girder spans are in river.

Zanesvi

Zanesvil

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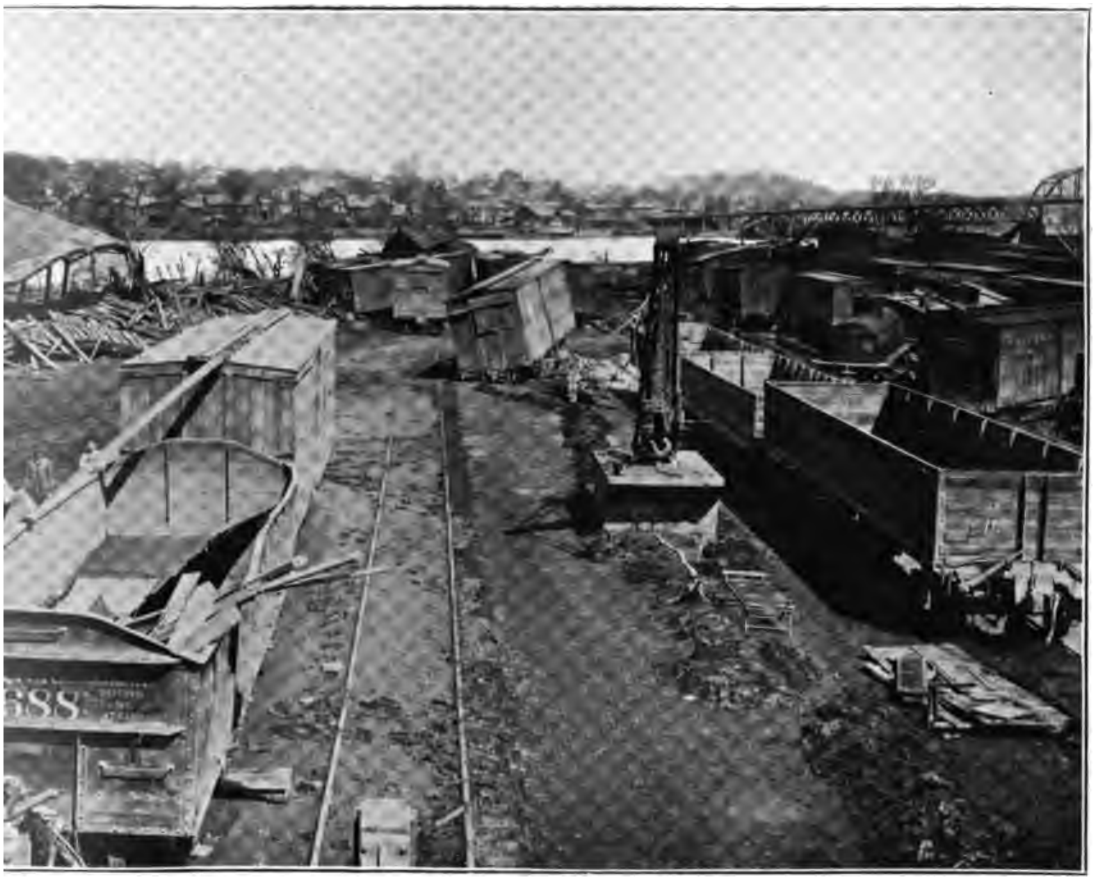
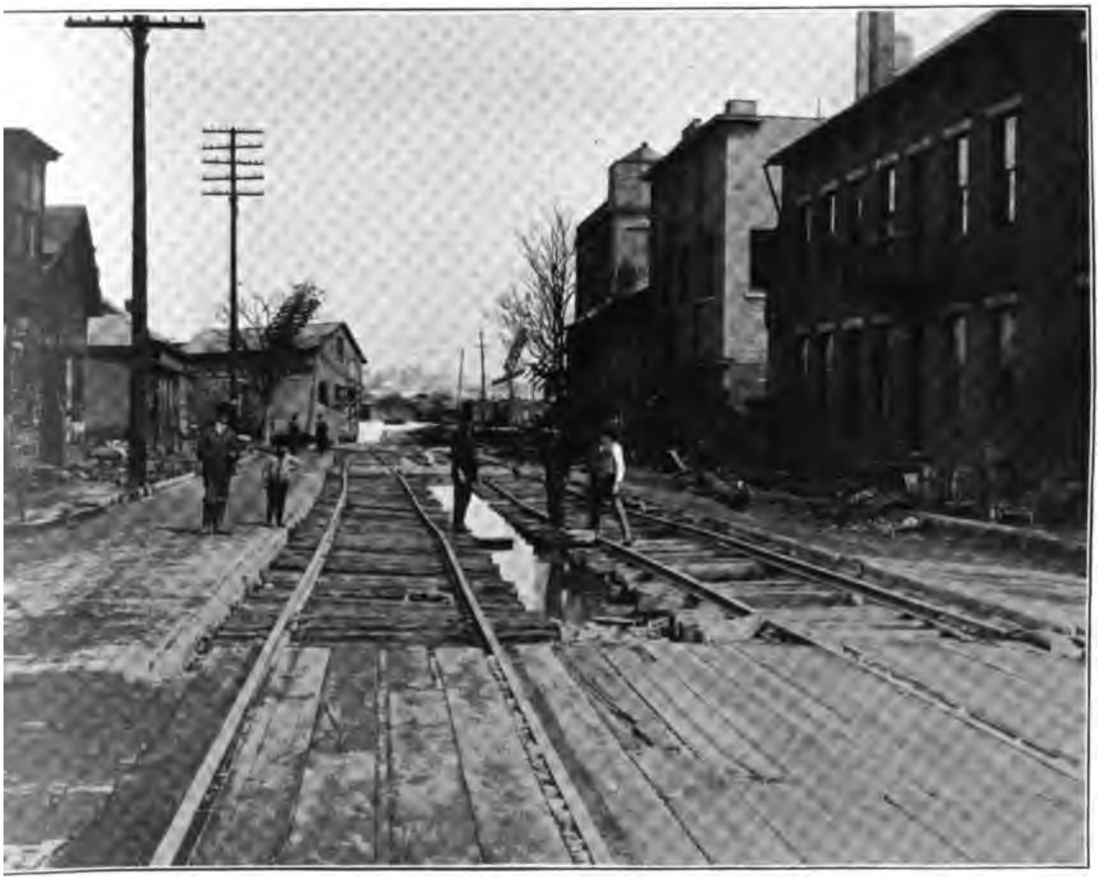


hio. March 30, 1913.

ing north from second story of passenger station. Damaged shed at north end of freight station at extreme left of picture.



hio. March 30, 1913.

; north along Pennsylvania Lines tracks in Second Street from Main Street.

Zanesvi

Lancast

hio. May 7, 1913.

Temporary structure replacing Bridge No. 20, over Muskingum River.

hio. March 28, 1913.

Looking east from center of yard.

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CHAPTER 29.

VANDALIA RAILROAD.

ST. LOUIS DIVISION.

sion crosses the main water courses at right angles, and suffered points—at Indianapolis, where it crosses the valley of White le, just west of Terre Haute, where it crosses the valley of the

ered in a little more vigorously on the St. Louis Division than , for on Easter Sunday afternoon a tornado struck Terre Haute, e in the southern part of the city. It was so severe that had isaster occurred at almost the same hour, the country would tion on Terre Haute.

which followed brought the streams up to the danger point all t only at Indianapolis and Macksville was serious damage done.

aute and Macksville the tracks lie comparatively low in the abash River. When the river overflowed its banks and spread was dammed up by the Vandalia fill and the highways across the evening of the 26th, it overflowed the tracks. The force which Vandalia to prevent damage from the Kaskaskia River was sent this point. In the morning it was found that the embankment washed away at two places, one gap being about one-half mile er the Wabash River (referrred to as the "east gap") and the other of a mile further west, at Macksville station (referred to as the of these breaks was about five hundred feet in length; one eleven ifteen feet deep, on the average. Between them lies Macksville dermined at a number of points and considerably damaged.

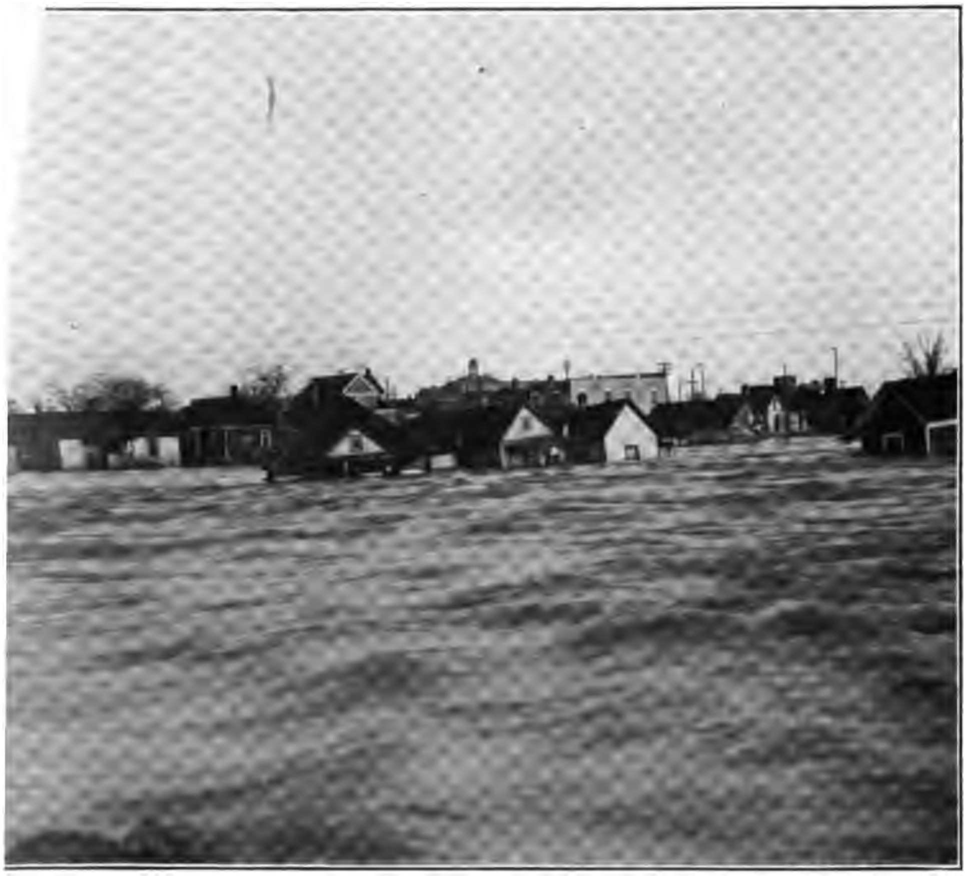
ilding pile trestle across the west gap commenced on the afternoon oss the east gap on the evening of the 29th. After the first twenty-e work was slow on account of the very strong current, the work at essed rapidly and one track was completed through at noon of April l been ferried across to the section between the gaps had put a track e through this section, and the pile driver which had been working s moved to the east gap to start work from the west end. The work ad been hampered by a lack of material there, most of it having to n the west side of the west gap. As material was now gotten without rk was made of the east gap, and it was closed at 3:00 o'clock in the 2nd.

me the damage at Indianapolis to the main track had been repaired e main line of the Vandalia was resumed at 4:00 P. M. April 2nd.

24 of March 25th had been unable to get into Indianapolis on account Belt Crossing. They were held in the transfer yard west of town

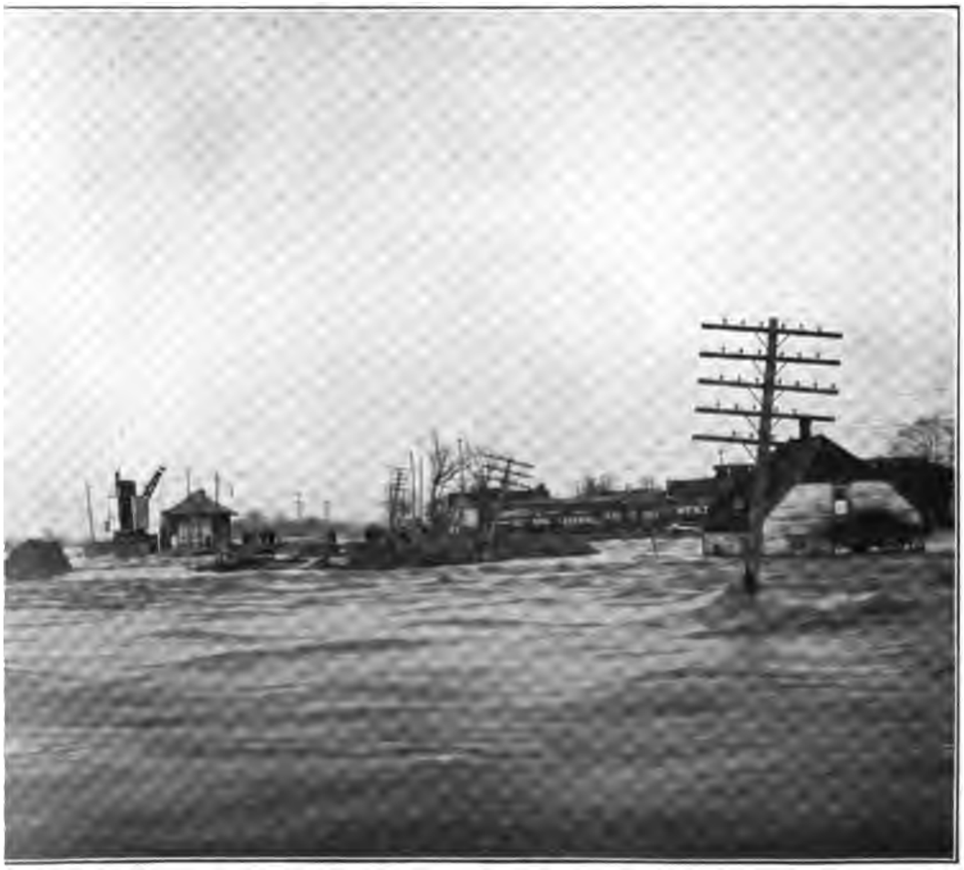
Macksville

Macksville, I



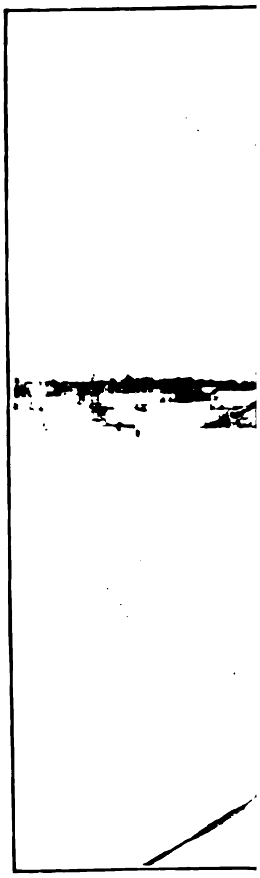
March 28, 1913.

Looking southeast from west side of west gap.
iver, in finding additional channels, cut two gaps through
Vandalia main line at Macksville.



March 28, 1913.

Looking east from west side of the westerly gap in the
St. Louis Division main line.



Macksville, Ind.
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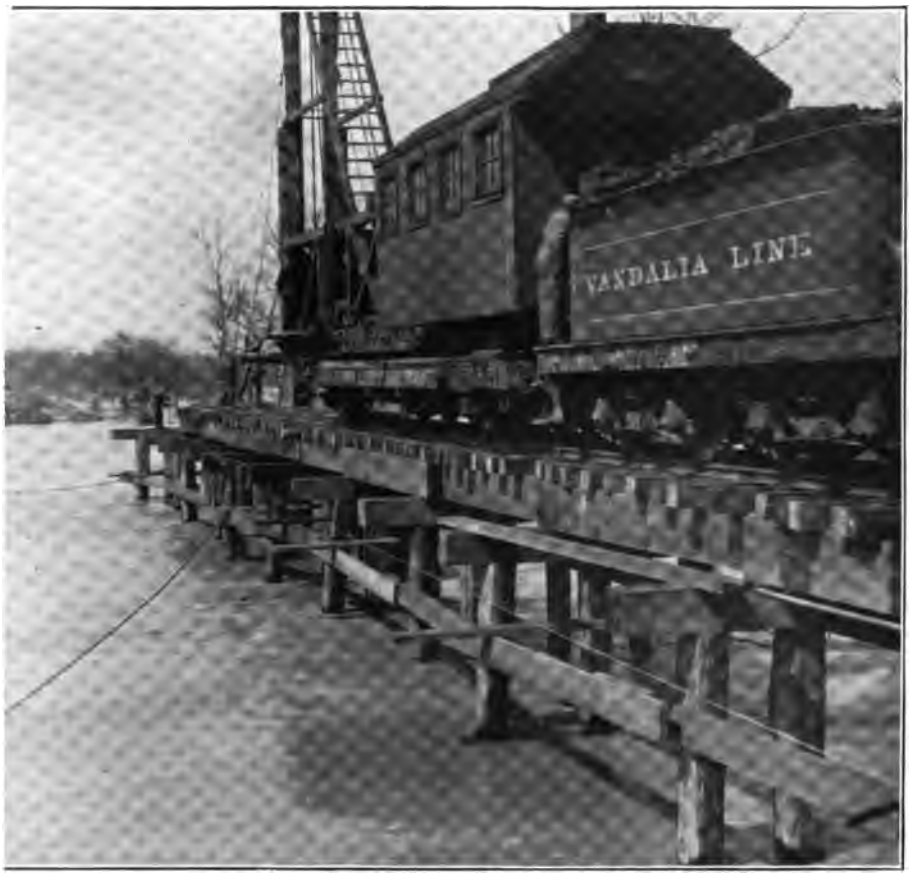
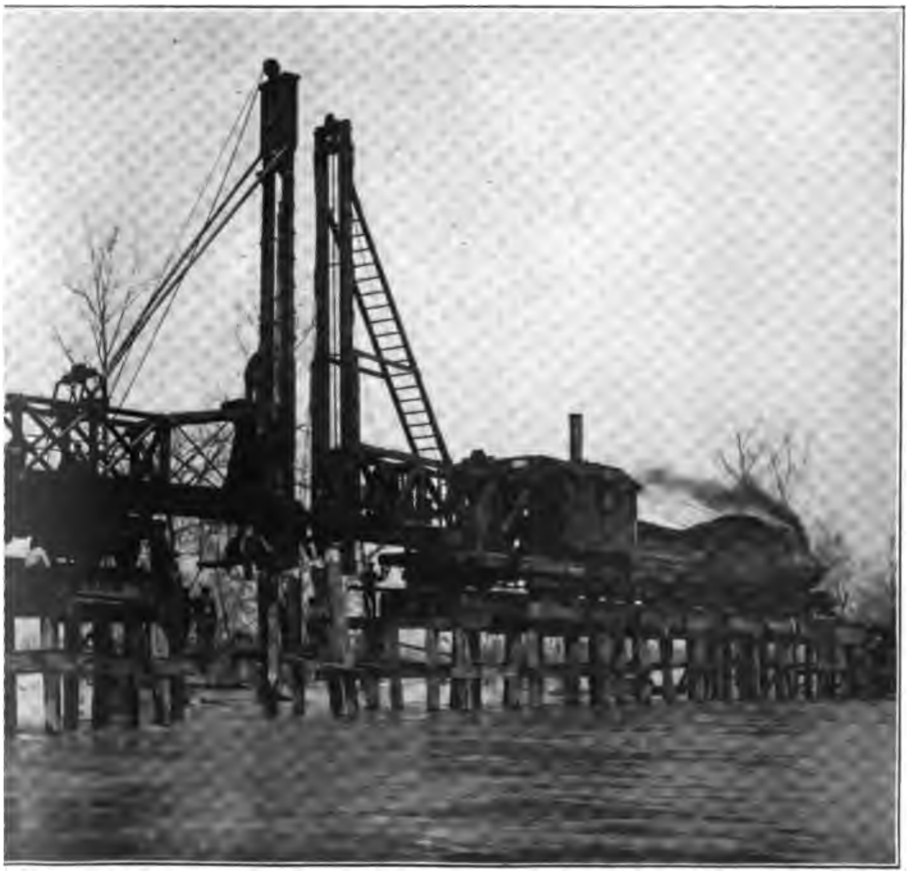
Macksville, Ind.



April 1, 1913.

est across east gap in St. Louis Division main line.



April 2, 1913.

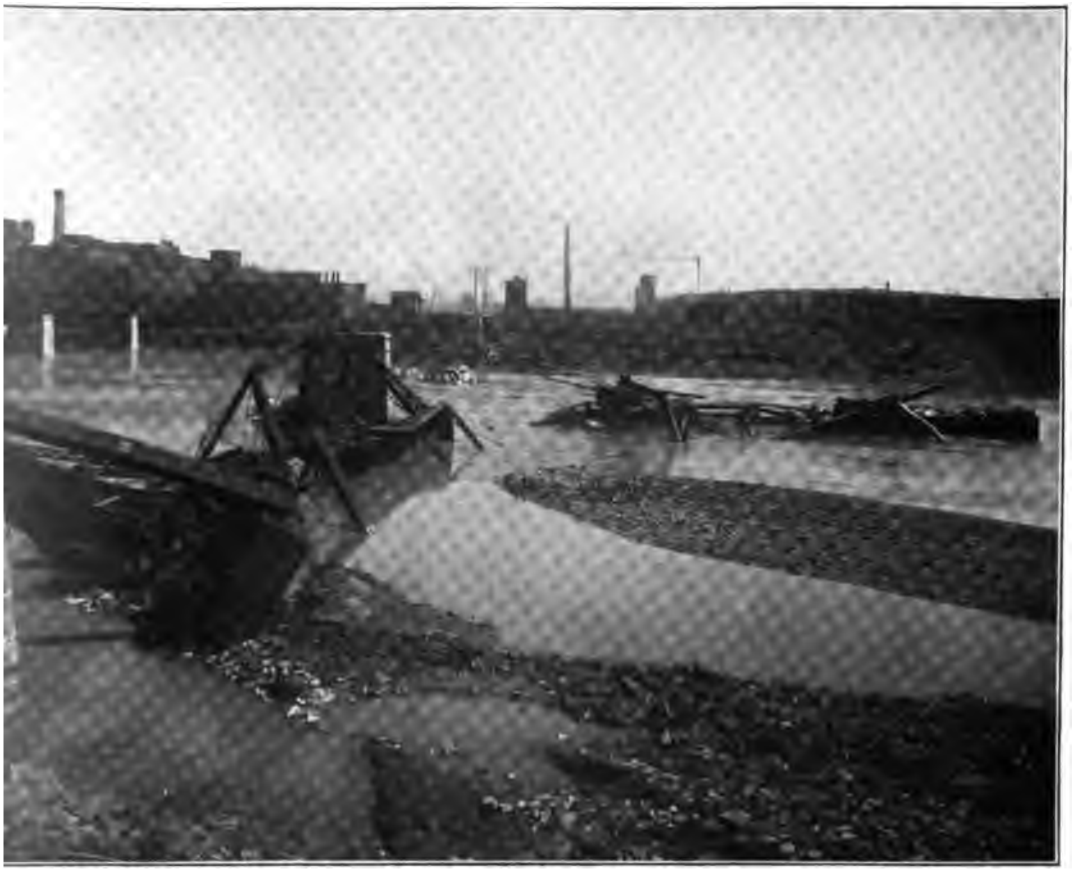
sing the east gap in the St. Louis Divison main line.

Indianapolis, Ind.

St. Louis

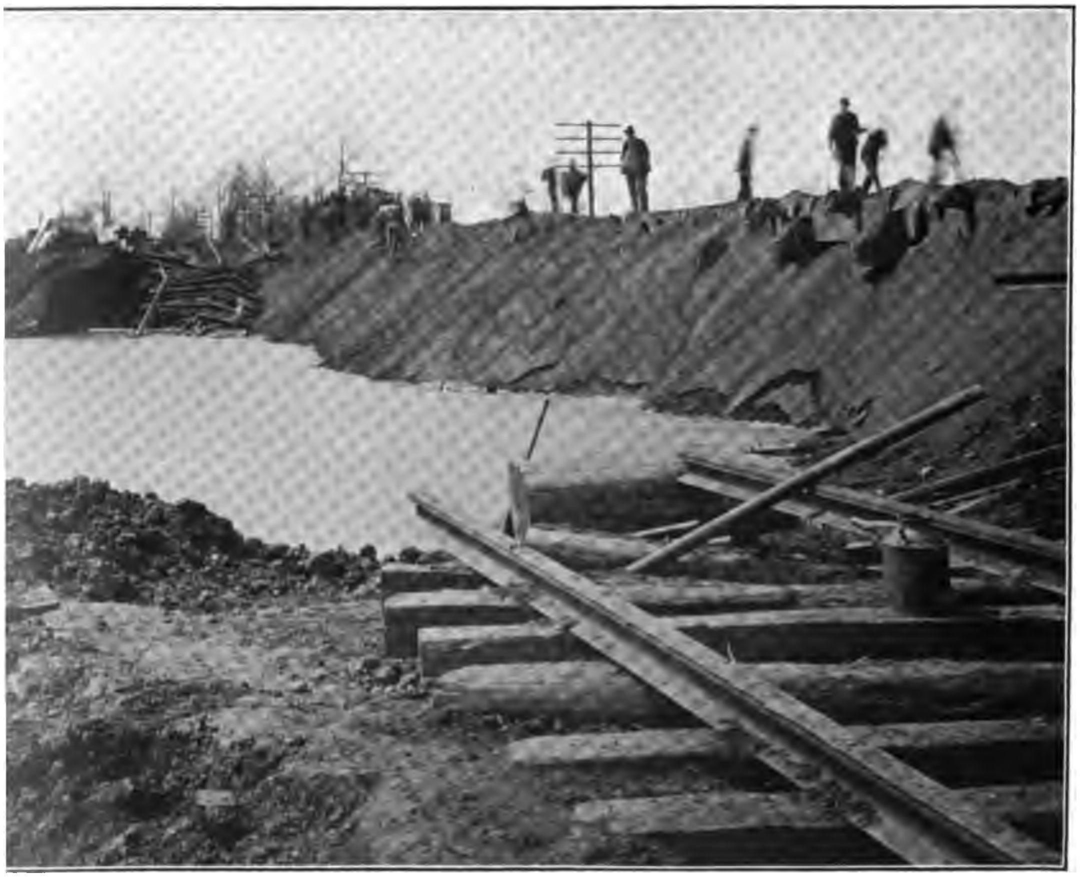
Indianapolis, Ind

St. Lou



nd. April 2, 1913.

ouis Division Bridge over White River at West Street yard, on old line.

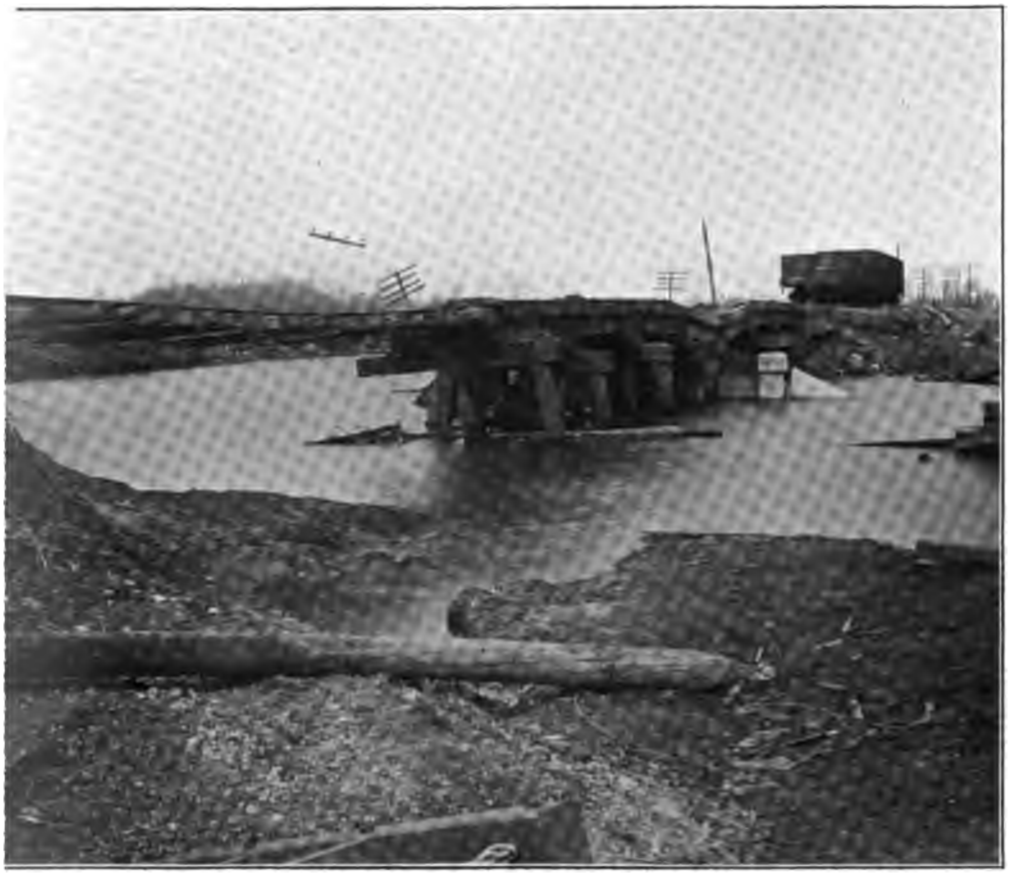


Ind., west of. April 2, 1913.

Louis Division; replacing track washed out just west of Belt Crossing.

Indianapolis, Ind
Bridge
cul

Martinsville, Ind.,
View



south of. April 2, 1913.
Vincennes Division just south of Belt Crossing. A concrete box
ert had been built replacing a wooden trestle partly filled in.
Both were destroyed.

nd., south of. April 3, 1913.
iew west between Martinsville and Bridge 43, over White River.

On the G. F

Ridgeville, altho

St. Mary's and S

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Passenger s

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from Decatur to

of repairs on the

CHAPTER 30.

GRAND RAPIDS & INDIANA RAILWAY.

I. Ry. the trouble was centered in the district from Fort Wayne to
there were minor washouts at numerous other points. The Wabash,
onie Rivers and Big and Little Limberlost Creeks all threatened to
over them, but did not succeed, and the only bridge of any sort
stle near Decatur, in the St. Mary's River Valley, which was washed
about 1,400 feet of track,

ice was annulled on the 25th, between Richmond and Fort Wayne,
etween Ridgeville and Fort Wayne. On the 28th only the section
ort Wayne was out of service, and on the 29th, with the completion
reak at Decatur, full service was resumed.

As stated
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The situati
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some stretches

Before anyt
gale struck the
as severe at Ter
and Ohio. The
were blown into
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of poles and bre

On Monday
the wires at Cor
was struck by li

On Tuesday
the waters came
lines were broken
being the Peoria
sylvania Lines, th
Peoria & Western

CHAPTER 31.

TELEGRAPH DEPARTMENT.

chapter on Meteorology, the main storm was preceded on March ind storm, which did more universal damage to telegraph lines on had any previous storm. Poles were blown over, trees were blown eaking them, car roofs from passing trains were blown off and cut al points. In all there were on the Lines West, scattered from one end e other, fifty-five places where every wire was broken. Such wires were crossed in many places, and intermittent crosses from swing-ying poles, with occasional branches of trees lodging in the wires, hat were left practically useless.

rain succeeded the wind, and in the western part of the territory et and heavily coated the wires, the weight even breaking the poles in Chicago. Lightning damaged the underground cable at Ft. Wayne, y lines at the switchboard.

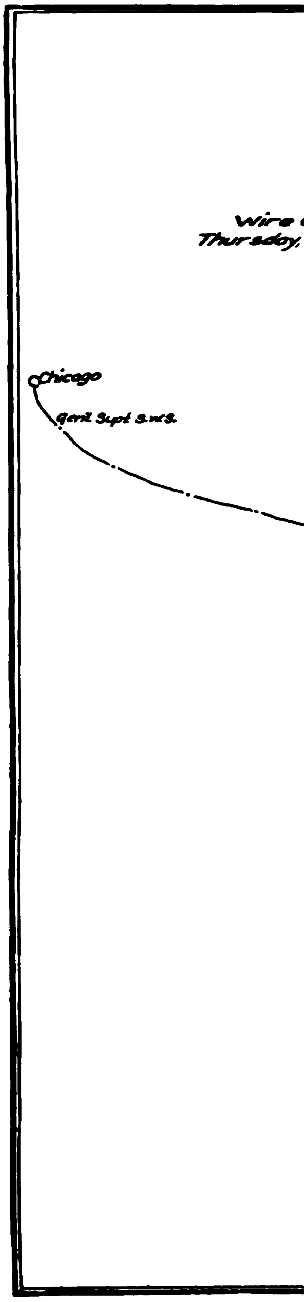
n is told more clearly in the diagrammatic map for the 21st than it in words.

y, the 22d of March, repairs, at least sufficient to permit of their use, e lines at practically all points. But it was found that permanent repairs ks, for hundreds of poles were broken or listed, guy wires broken, and of line had to be completely replaced.

thing in the nature of permanent repair was even attempted, another lines. The storm of Easter Sunday, the 23d, was almost if not quite rre Haute as it was at Omaha, and the wind was high all through Indiana e damage done was mainly in Northern Indiana, where again car roofs o the wires, an interlocking tower at Burnham was blown over, breaking the tower at Davis was blown across the tracks, taking down a numbe reaking all the circuits.

lay the 24th the damage extended eastwardly; a car roof was blown into Converse, Ind., and another at Beloit, Ohio. The station at Beaver, Pa., y lightning and the cable box burned out.

day morning the 25th reports came in of flood damage everywhere. As ame up, communication facilities in every direction were cut off, until the oken on eighteen of the twenty-two divisions, the four unaffected by the flood oria Division of the Vandalia, the Chicago Terminal Division of the Penn-es, the Northern Division of the Grand Rapids & Indiana, and the Toledo, stern Railway. Most of the day it was found possible to reach nearly all points



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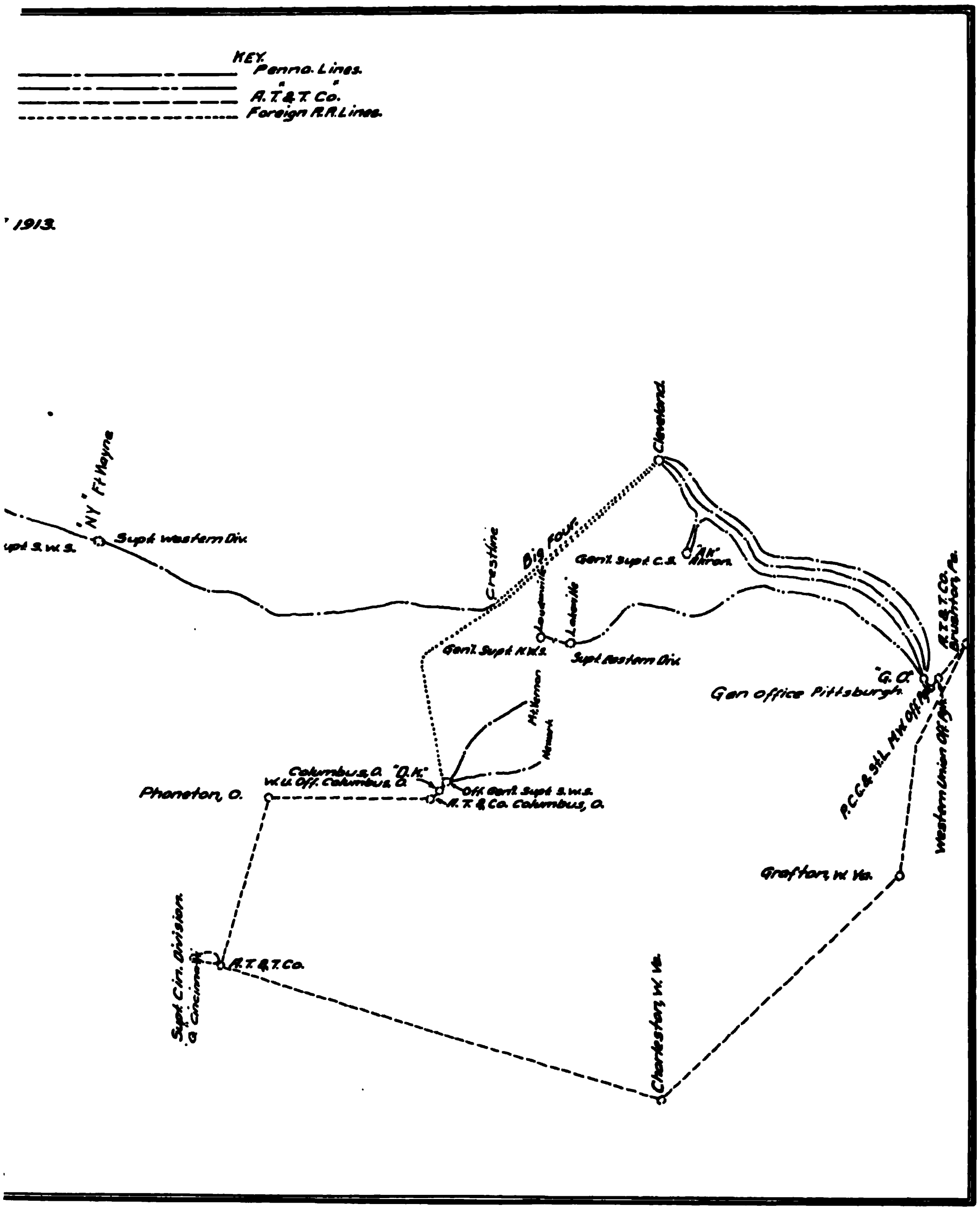

the day, by working in water and running a work train through the water
iles, five circuits were restored on the Eastern Division through the flooded
d Pittsburgh-Chicago service was resumed. A circuit to Columbus, Ohio,
ed over this line to a connection with the Big Four at Crestline; one to Toledo
led via Bucyrus, and one to Logansport via Plymouth. A second wire
reak at Piqua gave fair service west over the Pan Handle and Vandalia as
cksville.

e 28th the water was receding rapidly at most points, and, except for about
laces, where there were impassable barriers, one or more wires were put in
service over the entire road.

The first circ
the following day

At Zanesvill
April 3d, and fro

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on April 3d, and

While it will
service was closed
April 15th, on whi
been permanently

For a clear
of diagrams show
the location of th
It is impossible t
27th, but the poin

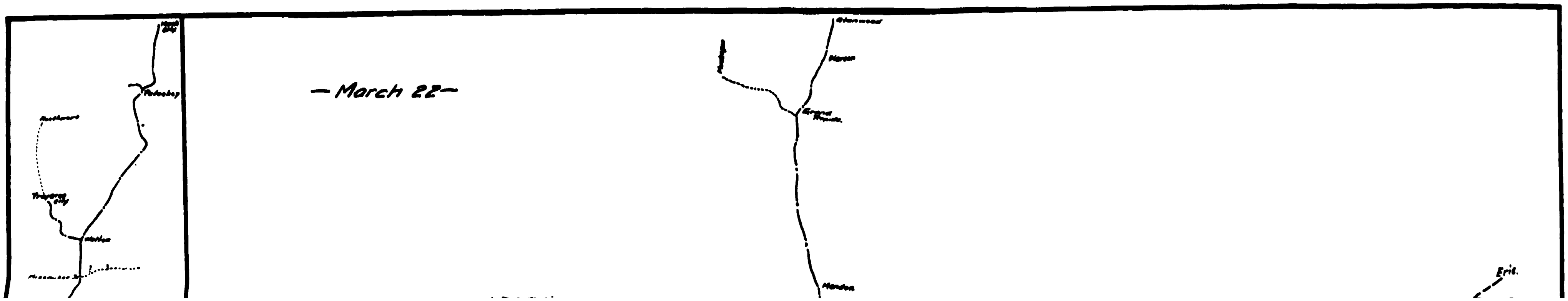
first circuit through Dayton was secured on April 11th, and full service resumed wing day.

Zanesville, circuits were run in from the south over the city "Y" bridge on and from there north to Trinway a circuit was completed on April 6th.

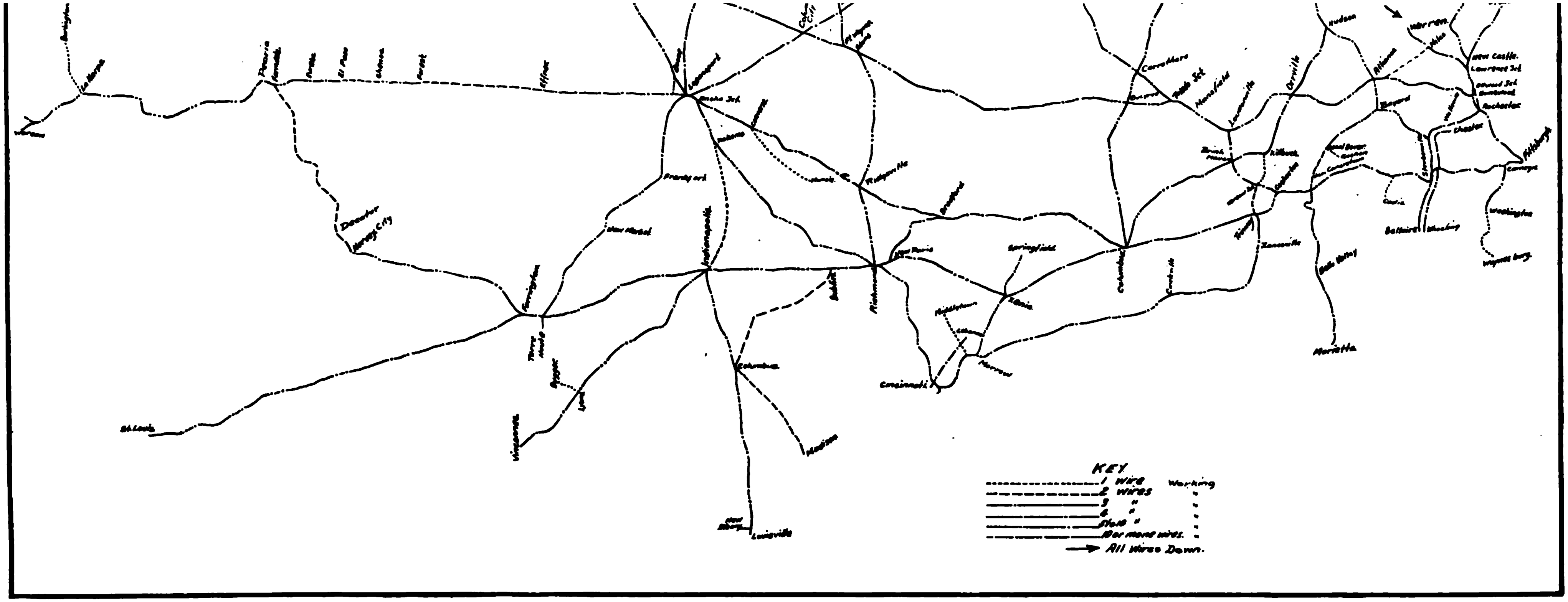
New Cumberland Branch service was restored on April 2d, the Dresden Branch 3d, and the Walhonding Branch on April 12th.

le it will be seen from the above that the last gap in the main line telegraph as closed on April 11th, full normal service over all lines was not resumed until h, on which date all wires had been restored, although some of them had not manently repaired.

a clear understanding of the situation from day to day, the following series ms showing the conditions of the telegraph lines, the number in service, and ion of the breaks, will be found superior to any description that could be given. ossible to show the hundreds of breaks due to the sleet storms of the 26th and the points of damage by high water are all shown.



—March 22—

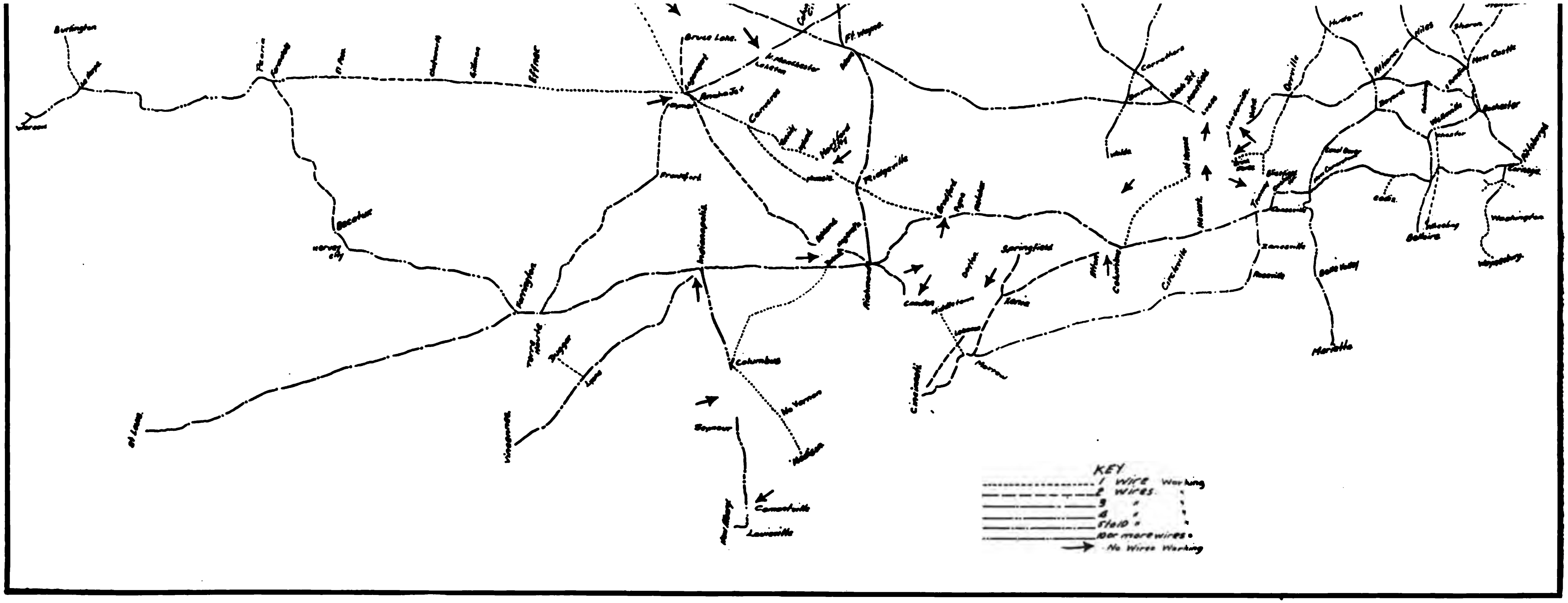


Flood of March, 1913. Pennsylvania Lines West of Pittsburgh.

DIAGRAM OF TELEGRAPH FACILITIES, MARCH 22, 1913.

Following the wind storm of the 21st, practically all lines were restored to service before the main storm arrived and again disrupted service.

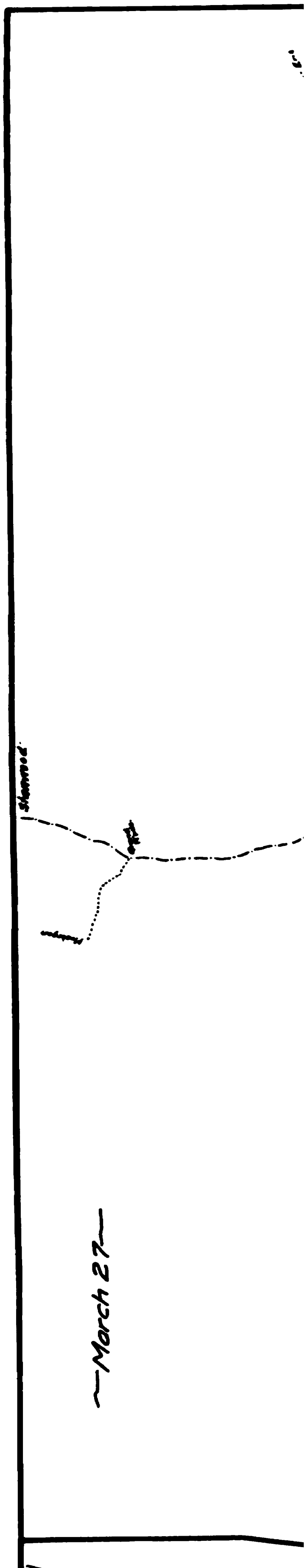
Erie
Grand Rapids
—March 25—



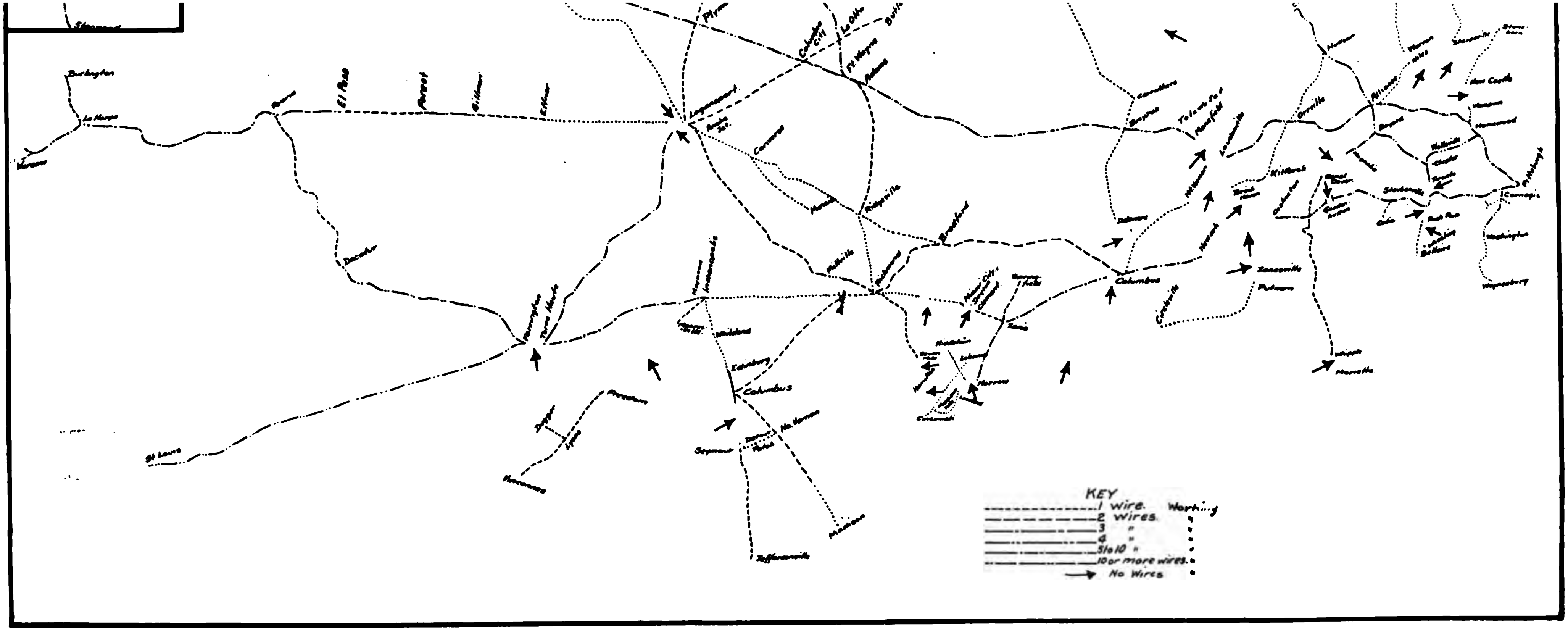
Flood of March, 1913. Pennsylvania Lines West of Pittsburgh.

DIAGRAM OF TELEGRAPH FACILITIES, MARCH 25, 1913.

The damage on this and following days was from high water in the streams and was almost universal.

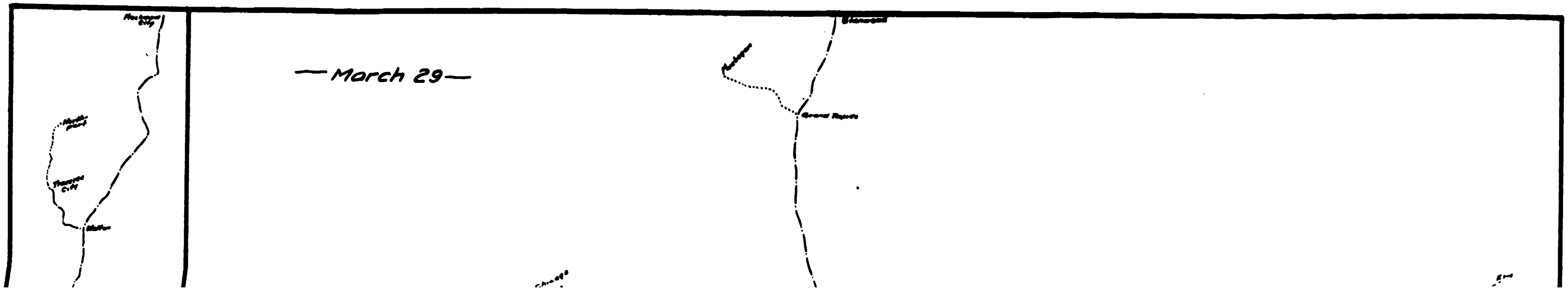


Sherwood
—March 27—



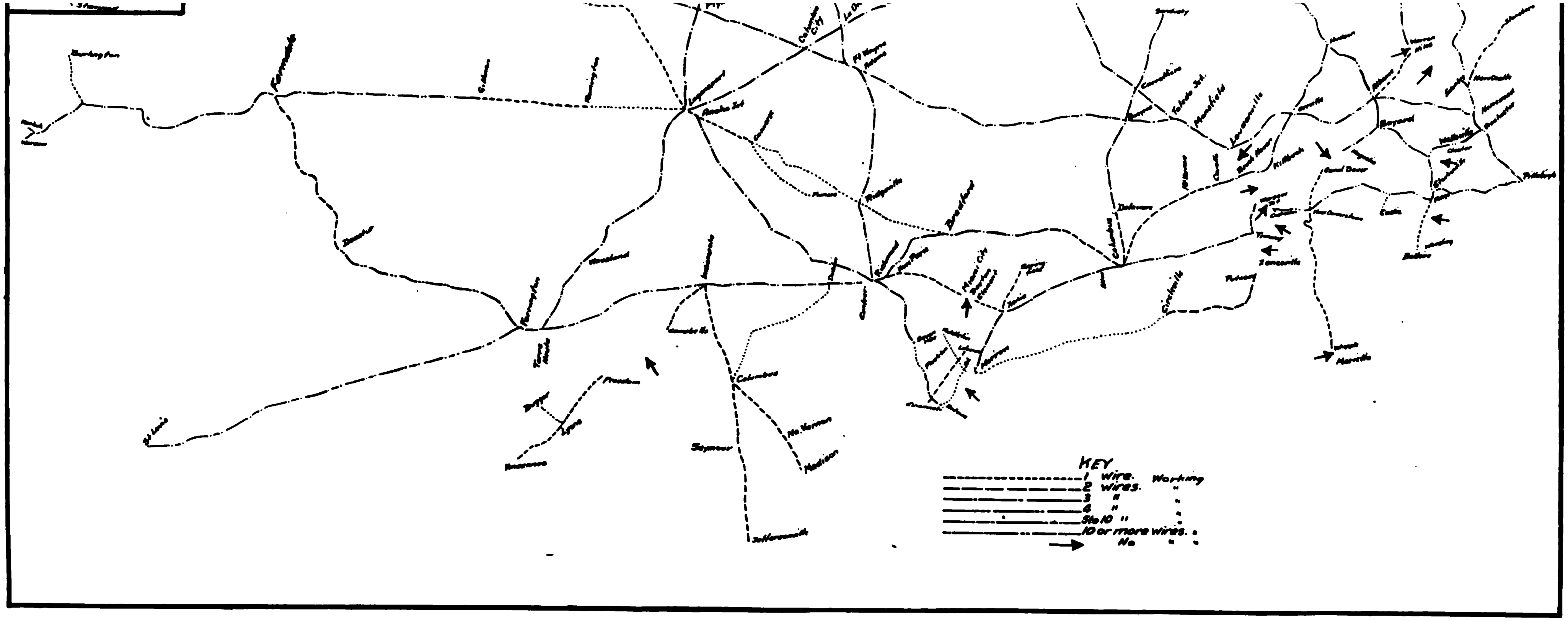
Flood of March, 1913. Pennsylvania Lines West of Pittsburgh.

Diagram of Telegraph Facilities, March 27, 1913.



—March 29—

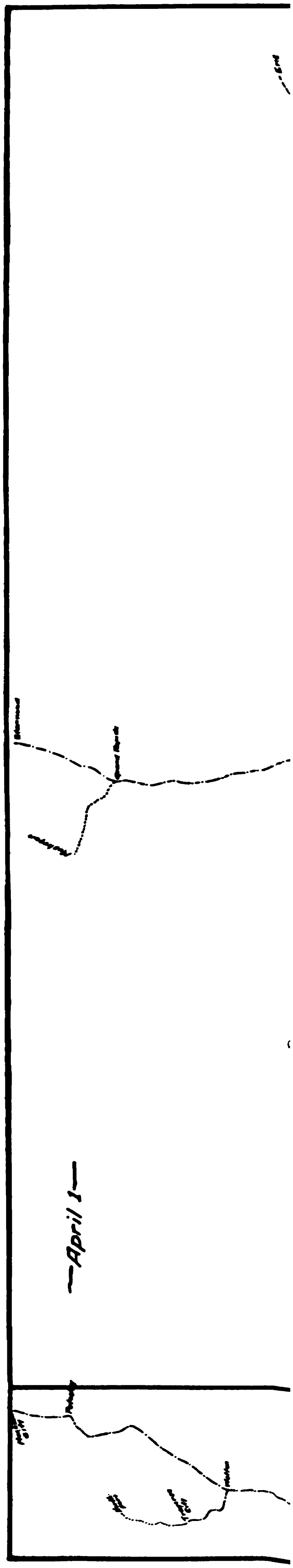
Mackinaw City
Northport
Traverse City
Walton
Muskegon
Grand Rapids

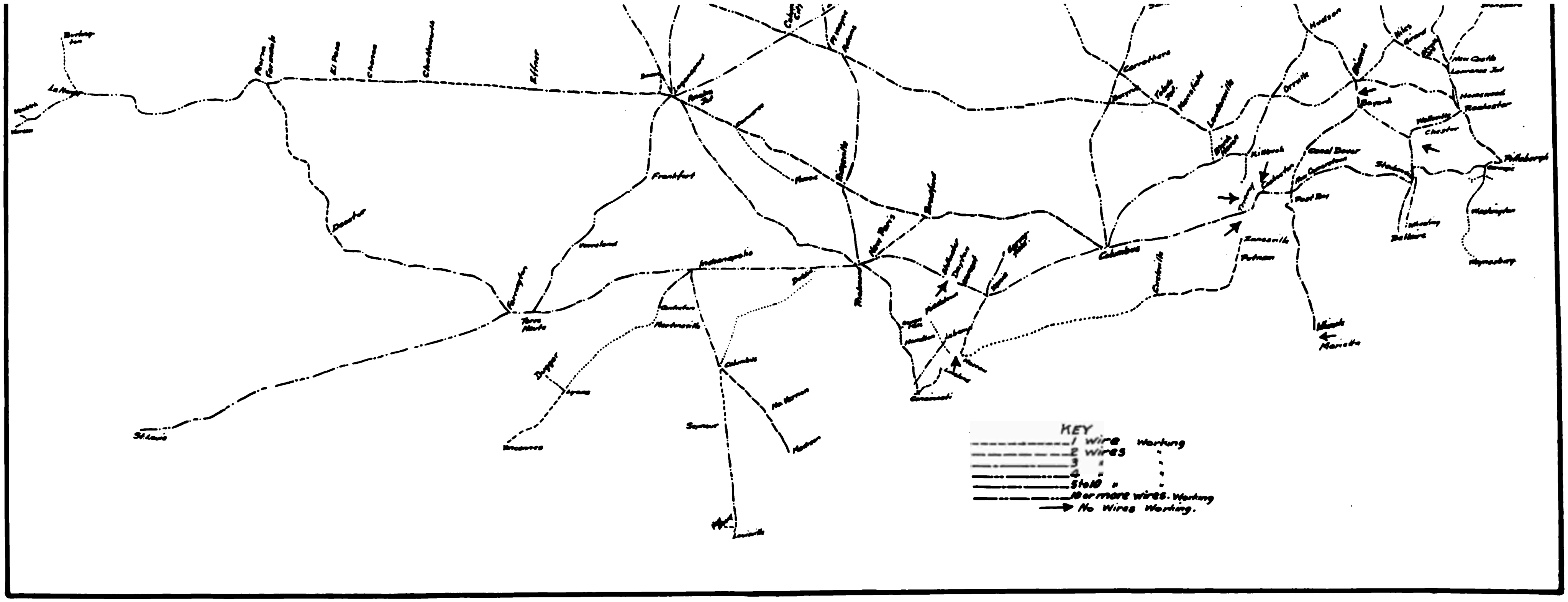


Flood of March, 1913.

Pennsylvania Lines West of Pittsburgh.

DIAGRAM OF TELEGRAPH FACILITIES, MARCH 29, 1913.


—April 1—



Flood of March, 1913.

Pennsylvania Lines West of Pittsburgh.

Diagram of Telegraph Facilities, April 1, 1913.

APPENDIX

In Territory
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These are the latest revis
Rainfall Map, Chapt

OBSERVATION STATION
Pennsylvania, Wes
Aleppo
Beaver Falls
Claysville
Confluence
Ellwood City
Erie
Franklin
Freeport
Greensboro
Greenville
Indiana
Irwin
Mosgrove
Pittsburgh
Saegerstown
Saltsburg
Sharon
Warren
West Newton
Ohio
Akron
Amesville
Antwerp
Bangorville
Bellefontaine
Benton Ridge
Bladensburg
Bowling Green
Brilliant
Bucyrus
Cadiz
Cambridge
Camp Denison

* Midnight to midni
† 7 A. M. to 7 A. M
⊙ 7 P. M. to 7. P. M
+ Included in followi
At stations not sp
early evening.

EXHIBIT A

RAINFALL BY DAYS

sed by Pennsylvania Lines West of Pittsburgh, eriod from March 23 to March 27, 1913.

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ent figures, and do not always agree with those used in the preparation of the difference is negligible for most purposes.

WATERSHED	MARCH 23	24	25	26	27	TOTAL (INCHES)
io	.10	.08	.58	1.09	.97	2.82
io	....	.59	1.65	1.79	.92	4.95
io	.15	.17	.58	1.51	1.02	3.43
ughiogheny	....	....	....	1.00	.76	1.76
io	....	.69	1.81	1.61	.92	5.03
ke Erie	1.28	1.38	2.12	.91	.58	6.27
legheny	....	1.41	2.22	1.32	.88	5.83
legheny	....	.14	1.53	1.15	.35	3.17
onongahela	....	.06	.04	1.40	1.12	2.62
io	1.34	1.11	3.74	.95	.60	7.74
legheny	.23	.62	.26	1.17	.80	3.08
onongahela	.24	.11	.27	1.23	.61	2.46
legheny	....	.19	1.77	1.93	.67	4.56
io	.20	.72	.55	1.66	.38	3.51
legheny	1.00	1.09	3.70	.74	.98	7.51
legheny	....	.05	.20	1.50	.77	2.52
io	....	1.19	2.92	1.24	.84	6.19
legheny	....	.70	1.70	1.36	1.10	4.86
ughiogheny	....	.10	.07	1.62	.64	2.43
ke Erie	....	1.85	4.75	1.89	1.16	9.65
io	.12	.03	.90	1.75	.91	3.71
aumee	2.45	.85	2.50	.12	.55	6.47
uskingum	.90	1.95	5.25	1.55	.91	10.56
eat Miami	1.37	1.52	5.61	2.13	.53	11.16
aumee	2.36	2.00	2.64	.24	.30	7.54
uskingum	.51	1.21	2.63	1.87	.70	6.92
ke Erie	2.00	1.50	2.00	.30	.25	6.05
io	+	+	+	+	+	2.58
ndusky	1.35	2.10	3.45	1.60	1.25	9.75
io	.52	.92	1.22	1.60	1.41	5.67
skingum	.33	1.09	1.87	2.55	.88	6.72
io	.02	1.92	2.25	2.85	.40	7.44

otal.

ed, time of reading gauge is irregular, readings usually being taken in the

OBSERVATION STATION
Ohio—Continued
Montpelier
Nellie
New Berlin
New Bremen
New Waterford
North Royalton
Norwalk
Oberlin
O. S. University
Ottawa
Pataskala
Peebles
Philo
Piqua
Plattsburg
Portsmouth
Sandusky
Sidney
Somerset
Springfield
Summerfield
Syracuse
Thurman
Tiffin
Toboso
Toledo
Urbana
Upper Sandusky
Warren
Waverly
Wauseon
Waynesville
Wickliffe
Wooster
Youngstown
Zanesville
Indiana
Anderson
Attica
Auburn
Berne
Bloomington
Bluffton

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* Midnight to midnig

† 7 A. M. to 7 A. M.

⊙ 7 P. M. to 7 P. M.

‡ Incomplete record, (

T Trace only, not enou

At stations not spe
early evening.

XHIBIT A—Continued.

ATERSHED	MARCH 23	24	25	26	27	TOTAL (INCHES)
mee	1.85	.81	1.35	....	.60	4.61
kingum	.75	1.50	2.60	2.50	....	7.35
kingum	1.10	1.20	3.30	1.30	.70	7.60
mee	2.06	1.80	3.22	1.22	.30	8.60
	.20	1.50	1.50	1.63	.72	5.55
Erie	2.00	1.00	3.43	.35	1.23	8.01
Erie	2.16	1.80	2.93	1.08	.70	8.67
Erie	2.10	1.50	3.15	1.50	1.08	9.33
to	.60	1.89	2.42	2.54	.41	7.84
mee	2.00	1.24	2.71	.35	.25	6.55
kingum	.50	1.66	2.37	2.12	.43	7.08
	T	.16	.97	2.48	.37	3.98
kingum	.36	1.36	1.46	2.29	.70	6.17
t Miami	....	1.80	‡	‡	‡	‡
t Miami	.50	1.75	2.01	2.10	.53	6.89
	....	T	.03	2.78	1.40	4.21
e Erie	2.20	1.58	2.05	.95	.40	7.18
t Miami	1.28	1.84	3.96	1.32	.38	8.78
kingum	.29	1.10	1.60	2.50	.45	5.94
t Miami	.53	2.01	3.57	1.90	.67	8.68
	....	.22	1.20	2.07	.58	4.07
	....	.11	.49	1.61	.48	2.69
	....	T	.58	1.65	T	2.23
dusky	1.98	1.12	3.65	.47	.75	7.97
kingum	....	.78	2.50	3.07	.88	.....
e Erie	1.90	1.82	1.74	.48	.25	6.19
t Miami	.62	2.13	3.12	2.25	.54	8.66
dusky	....	2.00	2.15	3.50	1.19	8.84
oning	1.70	1.80	2.92	1.36	.49	8.27
to	.01	.26	1.29	2.57	.38	4.51
mee	2.07	1.14	1.78	.32	.34	5.65
le Miami	.35	2.15	2.56	2.30	.33	7.69
e Erie	1.53	1.14	2.71	1.06	.94	7.38
kingum	1.16	1.94	4.84	1.40	.81	10.15
oning	....	1.02	2.96	‡	‡	‡
kingum	....	.09	2.17	‡	‡	‡
F. White	2.34	1.50	2.51	.50	.14	6.99
ash	.37	2.80	2.28	....	.63	6.08
mee	.09	3.39	1.75	.13	.03	5.39
mee	2.30	2.34	2.56	.42	.19	7.81
F. White	.11	.79	6.56	1.12	.62	9.20
ash	....	3.80	3.00	.10	.60	7.50

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d, time of reading gauge is irregular, readings usually being taken in the

OBSERVATI STATION
Indiana—Contin
Salem
Scottsburg
Seymour
Shelbyville
Shoals
South Bend
Terre Haute
Underwood
Veedersburg
Vevay
Vincennes
Washington
Whitestown
Whiting
Winona Lake
Worthington
Illinois, Eastern
Albion
Casey
Charleston
Chicago
Danville
Equality
Fairfeld
Flora
Golconda
Hoopeston
McLeansboro
Metropolis
Montrose
Mt. Carmel
New Burnside
Newton
Olney
Palestine
Paris
Philo
Rileyville
Shawneetown
Tuscola
Urbana

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* Midnight to mi

† 7 A. M. to 7 A.

⊙ 7 P. M. to 7 P.

T Trace only, not

At stations not
early eveni

EXHIBIT A—Concluded.

WATERSHED	MARCH					TOTAL (INCHES)
	23	24	25	26	27	
Ohio	.10	2.00	3.10	1.10	.20	6.50
E. F. White	.20	2.69	3.41	1.31	.16	7.77
E. F. White	.08	2.05	5.43	.28	.21	8.05
E. F. White	.41	2.06	3.57	.90	.17	7.11
E. F. White	T	.37	6.66	1.80	.45	9.28
St. Joseph	1.15	.53	.88	.60	.18	3.34
Wabash	1.05	2.45	.77	.19	.10	4.56
Ohio	.01	2.10	3.30	2.30	.21	7.92
Wabash	2.00	2.00	1.61	.47	.10	6.18
Ohio	T	1.80	3.65	2.00	....	7.45
Wabash	.20	1.10	6.20	1.30	.60	9.40
W. F. White	.15	2.08	5.83	.85	....	8.91
W. F. White	.12	2.98	3.09	.11	.75	7.05
Lake Michigan	1.00	.54	.17	.10	....	1.81
Wabash	1.73	1.54	1.18	.31	....	4.76
W. F. White	.21	2.26	4.25	.69	.18	7.59
Wabash	T	2.10	6.23	.71	.07	9.11
Wabash	1.17	1.58	1.31	.55	.18	4.79
Wabash	2.76	1.07	1.48	.54	....	5.85
Lake Michigan	1.16	.21	.13	T	....	1.50
Wabash	2.20	1.35	1.40	.54	.23	5.72
Ohio	T	.27	3.02	.97	T	4.26
Wabash	....	2.22	6.13	.55	.65	9.55
Wabash	T	2.38	3.30	.40	.11	6.19
Ohio	....	.26	5.31	.81	.41	6.79
Wabash	2.10	1.32	1.27	.30	.20	5.19
Ohio	....	1.60	4.35	.85	.16	6.96
Ohio	....	.35	3.74	1.25	.05	5.39
Wabash	.69	2.03	1.21	.60	.10	4.63
Wabash	T	.86	6.20	1.50	.60	9.16
Ohio	T	.03	2.50	1.10	.08	3.71
Wabash	.42	2.06	1.82	.32	.03	4.65
Wabash	....	.78	4.81	.75	.37	6.71
Wabash	.16	1.34	3.67	.40	....	5.57
Wabash	.25	2.34	2.45	.08	.32	5.44
Wabash	1.96	1.68	1.03	.24	.04	4.95
Ohio	....	.78	3.14	.79	.03	4.74
Ohio	....	.52	1.62	2.44	.74	5.32
Wabash	2.05	1.22	1.23	.42	.08	5.00
Wabash	1.69	1.51	1.31	.28	.03	4.82

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ıarked, time of reading gauge is irregular, readings usually being taken in the

and Maximum Height of Str
flood

OBSERVATION STATION	FLOOD STAGE (FEET)	22
Mahoning River		
Youngstown, O......	5	.6
Beaver River		
Beaver Falls, Pa.....	11	4.6
Tuscarawas River		
Canal Dover, O.....	8	.....
Muskingum River		
Coshocton, O.......	8	1.
Zanesville, O........	25	9.
Beverly, O.........	25	7.
Scioto River		
Columbus, O........	17	4.
Circleville, O.......	12	....
Chillicothe, O......	14	1.
Great Miami River		
Dayton, O.........	18	3.
Hamilton, O........	12	3.
Little Miami River		
Kings Mills, O......	17	....
White River		
Anderson, Ind......	9	4.
Indianapolis, Ind....	12	4.
Shoals, Ind........	20	7.
Wabash River		
Bluffton, Ind.......	12	3.
Logansport, Ind. ..	12	3.
Terre Haute, Ind....	16	7.
Mt. Carmel, Ill......	15	11.
Ohio River		
Pittsburgh, Pa.	22	5.
Wheeling, W. Va....	36	8
Parkersburg, W, Va.	36	10.
Cincinnati, O.......	50	27.
Madison, Ind.......	46	25.
Louisville, Ky.......	28	11.
Cairo, Ill...........	45	39.
Sandusky River		
Tiffin, O............	7	2.
Maumee River		
Fort Wayne, Ind....	15	7.

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* Obtained by survey or sub

† Measurements made at an

× Dyke broke and let water

EXHIBIT B

DAILY RIVER GAUGES

Territory Traversed by Pennsylvania Lines West of Pittsburgh, during the 1913, as shown by records of U. S. Government.

MARCH						HIGHEST, 1913		PREVIOUS RECORD		1913 Compared with previous highest stage (feet)
24	25	26	27	28	29	STAGE (FEET)	DATE	STAGE (FEET)	DATE	
4.7	15.5	22.9	......	......	10.4	22.9	Mar. 26	15.8	Jan. 21, 1904	+7.1
6.6	13.2	16.7	17.4	15.1	12.0	17.4	Mar. 27	15.4	Jan. 22, 1904	+2.0
2.3	7.0	13.0	15.0	16.1	9.0	16.1	Mar. 28	12.0	....	+4.1
2.5	11.0	......	......	......	......	*20.0	Mar. 25	22.0	Mar. 24, 1898	—2.0
9.9	21.2	......	*51.8	......	......	*51.8	Mar. 27	36.8	Mar. 24, 1898	+15.0
7.7	16.6	......	*46.5	......	......	*46.5	Mar. 27	35.0	Mar. —, 1898	+11.5
6.2	21.9	20.9	19.7	17.4	14.7	22.9	Mar. 25	21.3	Mar. 23, 1898	+1.6
......	11.6	24.2	20.3	16.2	13.8	24.2	Mar. 26	19.3	July 17, 1884	+4.9
1.6	11.9	*37.8	......	......	24.6	*37.8	Mar. 26	28.3	Mar. 24, 1898	+9.5
7.0	24.0	†28.1	†22.2	†15.7	11.6	*29.0	Mar. 25	21.3	— 1866	+7.7
4.8	19.6	......	25.0	19.2	14.8	*34.6	Mar. 26	21.2	Mar. 24, 1898	+13.4
3.3	17.8	33.7	......	......	......	33.7	Mar. 26	27.2	....	+6.5
11.8	17.6	20.6	14.0	10.2	7.8	22.1	Mar. 25	18.8	Mar. 23, 1904	+3.3
11.0	18.0	......	......	......	......	25.7	Mar. 25	19.5	Apr. 1, 1904	+6.2
8.8	21.6	29.5	37.0	42.2	41.7	42.2	Mar. 28	34.1	Mar. 30, 1904	+8.1
12.3	17.5	20.0	19.0	13.8	12.3	20.0	Mar. 26	16.7	Apr. —, 1904	+3.3
12.1	......	22.5	......	......	......	22.5	Mar. 26	17.3	Feb. —, 1883	+5.2
14.5	19.5	27.0	31.2	30.8	29.2	31.3	Mar. 27	27.7	Feb. 18, 1883	+3.6
13.6	18.3	21.4	23.0	24.8	27.8	31.0	Mar. 30	28.3	Aug. 7, 1885	+2.7
4.5	7.8	20.1	28.1	30.4	24.8	30.4	Mar. 28	35.5	Mar. 15, 1907	—5.1
7.5	11.5	30.5	45.5	50.8	50.0	51.1	Mar. 28	53.1	Feb. 7, 1884	—2.0
9.5	10.0	22.1	43.0	54.9	58.7	58.9	Mar. 29	53.9	Feb. 9, 1884	+5.0
22.6	29.3	50.3	57.2	62.6	66.0	69.8	April 1	71.1	Feb. 14, 1884	—1.3
21.6	27.5	43.5	53.6	57.0	59.6	62.8	April 1	61.8	Feb. 15, 1884	+1.0
10.0	11.4	22.5	33.6	38.4	41.1	44.9	April 2	46.7	Feb. 15, 1884	—1.8
40.3	40.9	43.5	45.5	47.4	49.1	54.8	April 4	54.0	Apr. 6, 1912	+0.8
7.0	12.5	19.4	16.0	12.0	8.0	19.4	Mar. 26	18.5	April 2, 1904	+0.9
19.6	24.0	×	×	×	×	*26.1	Mar. 26	22.5	Mar. 8, 1908	+3.6

t measurement.

lace after destruction of gauge.

round gauge.

EXHIBIT C—Concluded

PASSENGER TRAINS MAROONED BY THE FLOOD OF MARCH, 1913.

MAROONED AT	Train No.	Date of Train	ENROUTE		TIME STOPPED	DISPOSITION OF PASSENGERS
			From	To		

Pittsburgh Div. Trinway, Ohio.......	74	March 25	Columbus	Dennison	[illegible] P. M., March [illegible]	returned to Columbus, others scattered to their homes.
Akron Div. Brink Haven, Ohio...	506	March 24	Cleveland	Columbus	Early A. M., March 25	Train returned to Killbuck March 29th, in the afternoon, and passengers transferred to Millersburg by carriage and to Orrville by special train and returned to Cleveland. Passengers slept in cars—had three sleeping cars.
Orrville, Ohio........	520	March 25	Cleveland	Columbus	Early A. M., March 25	Passengers left Orrville by various P., F. W. & C. trains.
Mt. Vernon, Ohio....	521	March 25	Columbus	Cleveland	Early A. M., March 25	Passengers returned to Columbus March 26th.
Apple Creek, Ohio...	507	March 25	Columbus	Cleveland	Early A. M., March 25	Taken on March 26th to Cleveland, via Orrville and Alliance.
Zanesville Div. Dresden, Ohio.......	49	March 25	Trinway	Zanesville	11:00 P. M., March 25	Passengers slept in sleeping cars of B. & O. train which was marooned at same time and were given meals at Dresden hotels, until they found means of departure. Equipment used for "make-up" service between Trinway and Zanesville when W. & L. E. was opened south of Ellis, April 4th.
Dresden, Ohio.......	8 B. & O	March 25	Trinway	Zanesville	11:00 P. M., March 25	Train was being detoured for B. & O. R. R. Passengers slept in sleeping cars and were given meals at Dresden hotels until train could be returned to the B. & O. via Trinway, on March 29th.

In addition to these trains which were actually marooned, many trains were, after more or less delay enroute, gotten to terminal points, where they were held until an open route could be found for forwarding them. As facilities were available at these points for properly caring for the passengers, the only inconvenience suffered was the delay. Among those so held at intermediate terminals were:

At Columbus, Ohio: Nos. 121, 31, 45, 11, 25, 1st 21, 7, 1st 19, 2d 19, 3 and P., F. W. & C. No. 23, all of March 25th, and P., F. W. & C. No. 29 of March 24-25.
At Richmond, Ind.: Nos. 44, 2nd 24, 1, 9 and 45 of March 24th.
At Indianapolis, Ind.: Nos. 14 and 18 of March 24th; Nos. 6, 4 and 36 of March 25th.
At Logansport, Ind.: No. 9 of March 24-25.

EXHIBIT E

RELIEF SUPPLIES, IN CAR OR TRAIN LOADS, MOVED BY PENNA. LINES TO THE FLOODED DISTRICT FOR EMERGENCY USE

March 28	Chicago	Dayton	Chicago	Crestline	16	U. S. Govt. train of rations.
March 29 to 31	Brooklyn Navy Yard	Dayton	Pittsburgh	Columbus	15	U. S. Govt. Supplies.
March 29 to 31	Brooklyn Navy Yard	Dayton	Pittsburgh	Columbus	18	U. S. Govt. Supplies.
March 27–8–9	Richmond	Dayton	Richmond	Miami City	4	Provisions.
March 29	Lima and Van Wert	Dayton	Lima	Crestline	8	Provisions.
March 28	Columbus	Dayton	Columbus	Dayton	1	
March 28–9–30	Canton	Dayton	Canton	Crestline	1	
March 28–9–30	Canton	Columbus	Canton	Crestline	1	
March 30–31	Canton	Columbus	Canton	Columbus	2	
March 30–31	Sebring	Columbus	Sebring	Columbus	1	
March 30–31	Alliance	Columbus	Alliance	Columbus	2	
March 30 to April 1	Baltimore	Dayton	Pittsburgh	Columbus	1	Red Cross Supplies.
March 31	Brooklyn	Dayton	Pittsburgh	Cleveland	1	U. S. Govt. Supplies.
March 31	Windber, Pa.	Columbus	Pittsburgh	Cleveland	1	
March 31	Johnstown, Pa.	Dayton	Pittsburgh	Cleveland	1	
April 1 to 4	Pittsburgh	Dayton	Pittsburgh	Columbus	1	
April 2–3	Chicago	Columbus	Chicago	Columbus	16	Chamber of Commerce.
April 4–5	Rahway, N. J.	Dayton	Pittsburgh	Dayton	1	
				Total	91	

This record is probably incomplete. In addition there were handled some l. c. l. shipments, free for relief work, and a number of troop and militia trains, of which no record was made.

EXHIBIT G

ACTUAL CHARGES MADE TO ACCOUNT "MARCH 1913 FLOOD" TO SEPTEMBER 30, 1913.

Accounts	Northwest System	Central System	Southwest System	Total	Vandalia R. R.	G. R. & I. Ry.	Total Penna. Lines
Maintenance of Way and Structures:							
Superintendence	$ 2,754.61	$ 3,776.32	$ 6,261.85	$ 12,792.78	$ 3,446.56	....	$ 16,239.34
	1,544.06	[illegible]	1,671.89	9,689.15	1,302.20	....	10,991.35

Accounts	Northwest System	Central System	Southwest System	Total	Vandalia R. R.	G. R. & I. Ry.	Total Penna. Lines
Maintenance of Way and Structures:							
Superintendence	$ 2,754,61	$ 3,776.32	$ 6,261.85	$ 12,792.78	$ 3,446.56	....	$ 16,239.34
Ballast	1,544.96	6,469.30	1,674.89	9,689.15	1,302.20	....	10,991.35
Ties	4,351.37	5,886.10	26,447.26	36,684.73	6,602.39	....	43,287.12
Rails	1,704.58	2,691.34	5,259.36	9,655.28	4,251.34	....	13,906.62
Other Track Material	459.95	760.19	4,595.49	5,815.63	12,850.74	....	18,666.37
Roadway and Track—(Applying Track Material)	4,336.31	3,123.15	1,542.50	9,001.96	....	....	9,001.96
Roadway and Track—(Track Maintenance)	7,718.98	2,535.76	7,696.70	17,951.44	....	....	17,951.44
Roadway and Track—(Repairing, Cleaning & Policing)	174,875.20	240,875.18	743,774.80	1,159,525.18	126,164.40	$ 5,291.22	1,290,980.80
Bridges, Trestles and Culverts	149,620.11	307,660.89	441,856.15	899,137.15	56,543.66	1,287.12	956,967.93
Over and Under Grade Crossings	4.00	....	....	4.00	140.54	....	144.54
Grade Crossings, Fences, Cattle Guards and Signs	182.70	805.65	4,288.96	5,277.31	217.76	....	5,495.07
Signals and Interlocking Plants	Cr. 169.82	100.32	10,854.24	10,784.74	3,471.75	....	14,256.49
Telegraph and Telephone Lines	23,340.60	36,390.10	47,889.97	107,620.67	3,295.64	....	110,916.31
Buildings, Fixtures and Grounds	3,123.36	6,468.49	32,476.87	42,068.72	121.63	....	42,190.35
Docks and Wharves	163.35	....	....	163.35	....	....	163.35
Roadway Tools and Supplies	2,144.05	1,293.99	9,227.29	12,665.33	249.82	....	12,915.15
Other Expenses	218.51	22.54	1,688.09	1,929.14	....	....	1,929.14
Total	$376,372.82	$618,859.32	$1,345,534.42	$2,340,766.56	$218,658.43	$6,578.34	$2,566,003.33
Maintaining Joint Tracks, Yards & Other Facilities,—Dr.	....	1,995.64	6,815.54	8,811.18	....	....	8,811.18
Maintaining Joint Tracks, Yards & Other Facilities,—Cr.	....	Cr. 19,506.06	Cr. 3,199.88	Cr. 22,705.94	....	....	Cr. 22,705.94
Total Maintenance of Way and Structures	$376,372.82	$ 601,348.90	$1,349,150.08	$2,326,871.80	$218,658.43	6,578.34	$2,552,108.57
Maintenance of Equipment	Cr. 3,929.62	1,464.01	42,392.59	$ 39,926.98	3,063.04	....	42,990.02
Traffic Expenses	2,480.21	436.11	3,857.03	6,773.35	278.43	....	7,051.78
Transportation Expenses, including Cost of Detour Service	74,537.02	15,797.17	158,015.81	248,350.00	7,093.02	....	255,443.02
General Expenses	77.19	280.21	1,509.00	1,866.40	54.84	....	1,921.24
Total	$449,537.62	$619.326.40	$1,554,924.51	$2,623,788.53	$220,147.76	$6,578.34	$2,859,514.63

These figures are incomplete, for the greater part of the expense for renewal of the destroyed and damaged bridges is yet to be incurred, and many expenditures for detour service, replacement of buildings, fixtures, etc., are yet to be made or accounted for. It is apparent, however, that the actual cost figures, when completed, will exceed the estimate made at the time of the flood (Exhibit F).